ORDER NO. VMD9708014C8

Service Manual

General Description
Adjustment Procedures
Block / Schematic Diagrams
Exploded Views / Parts List

Panasonic Mini DV PAL

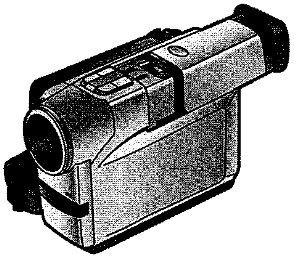
Digital Video Camera/Recorder

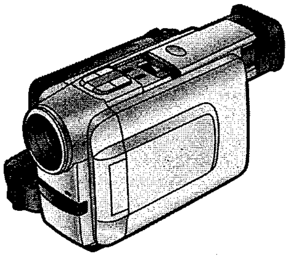
NV-DS1EG/B/EN
NV-DS5EG/B/EN

DJ-MECHANISM

AC ADAPTOR
VW-AD3E

OUTPUT TERMINAL BOX
VSK0499


NV-DS1


NV-DS5

SPECIFICATIONS

ITEM	SPECIFICATION
POWER	Source: Battery Pack; 7.2 V DC AC Adaptor; 7.9 V DC Consumption: During Camera Recording Using The LCD; 6.7 W (NV-DS5) During Camera Recording Using The Viewfinder; 5.5 W
RECORDING FORMAT	Digital Video SD Format
TAPE FORMAT	Mini DV Cassette Tape (Tape width 6.35 mm)
TAPE SPEED	SP mode: 18.83 mm/s LP mode: 12.57 mm/s Record/ Playback Time SP mode: 60 min. with DVM60 LP mode: 90 min. with DVM60
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)
	STANDARD ILLUMINATION: 1,400 lux
	MINIMUM REQUIRED ILLUMINATION: 1 Lux
	LENS: 10 : 1 Wide-angle Power Zoom Lens (Optical capability) F1.4 Focal Length: 4.7-47.0 mm Digital AI Auto Focus / Auto Iris Filter Diameter: 30.5 mm
	IMAGE SENSOR: 1/3 inch CCD Image Sensor
	VIEWFINDER: 0.5 inch Colour Electronic Viewfinder 3.8-inch Colour LCD Monitor (NV-DS5)
VIDEO	RECORDING FORMAT: Digital Component
	TELEVISION SYSTEM: CCIR; 625 Lines, 50 Fields PAL Colour Signal

ITEM	SPECIFICATION
VIDEO	VIDEO OUTPUT LEVEL: 1.0 Vp-p, 75Ω S-VIDEO OUTPUT LEVEL; Y: 1.0 Vp-p 75Ω C: 0.3 Vp-p 75Ω
AUDIO	RECORDING FORMAT: Digital PCM Stereo; 16 bit (48 kHz/2 ch) 12 bit (32 kHz/4 ch)
	OUTPUT LEVEL: 316 mV, 600Ω
DIGITAL STILL PICTURE	Digital Still Picture Output, Control Signal Input/Output (Transfer rate: max. 115 kbps)
DIGITAL INTERFACE	DV Output Terminals (Compliant with IEEE 1394, 4-pin)
OPERATING TEMPERATURE	0 ~ 40°C
OPERATING HUMIDITY	10 ~ 80%
WEIGHT	Approx. 520 g (without Battery Pack): NV-DS1 640 g (without Battery Pack): NV-DS5
DIMENSIONS	Approx. 67 (W)×95 (H)×132 (D) mm: NV-DS1 78 (W)×95 (H)×132 (D) mm: NV-DS5
STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. S-VIDEO Cable 1 pc. Shoulder Belt 1 pc. DC Input Cable 1 pc. AC Cable 1 pc. AV Cable 1 pc. Remote Controller 1 pc. Battery for Remote Controller 1 pc. Output Terminal Box 1 pc. Shoulder Strap 1 pc. 21 pin Adaptor (Except NV-DS1EN, NV-DS5EN) 1 pc. Soft Case (NV-DS1EN, NV-DS5EN Only) 1 pc. Cassette Tape (NV-DS1EN, NV-DS5EN Only)

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

© 1997 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

INTRODUCTION

This service manual contains technical information which will allow service personnel's to understand and service this model.

Section 1 : Presents you with some general information of features and controls,enabling you to become familiar with each function.

Section 2 : Contributes to your electrical adjustment as well disassemble and replacement procedures.

Section 3 : Contain block diagrams which offers you information for checking and understanding each circuit.
Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c..

Section 4 : Contain exploded views and parts list.

Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.

Note 1 : Adjustment procedure for Mechanism Chassis is separate volume.
Please refer to following manual for detail of adjustment procedure for Mechanism Chassis.

DJ Mechanism Chassis : VMD9706005A8

Note 2 : The Electric adjustment is supported only by TATSUJIN software which is uploaded on item 13 of CS-Net in Pana-Van.
Please download applicable software from CS-Net and use it.
(You can make copies freely.)

CONTENTS

SERVICE INFORMATION 1
SECTION 1 GENERAL DESCRIPTIONS 1-1
SECTION 2 ADJUSTMENT PROCEDURES 2-1
2-1. DISASSEMBLY FLOW CHART 2-1
2-2. DISASSEMBLY PROCEDURES 2-2

SECTION 3 BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS 3-1
3-1. ABBREVIATIONS BLOCK DIAGRAM 3-1
3-2. OVERALL BLOCK DIAGRAM 3-7
3-3. CAMERA & VIDEO BLOCK DIAGRAM 3-9
3-4. SYSTEM CONTROL & SERVO BLOCK DIAGRAM 3-13
3-5. EVF & LCD MONITOR BLOCK DIAGRAM 3-17
3-6. AUDIO BLOCK DIAGRAM 3-19
3-7. INTERCONNECTION SCHEMATIC DIAGRAM 3-21
3-8. CAMERA CONNECTION SCHEMATIC DIAGRAM 3-23
3-9. SENSOR SCHEMATIC DIAGRAM 3-25
3-10. PROCESS SCHEMATIC DIAGRAM 3-30
3-11. LENS DRIVE SCHEMATIC DIAGRAM 3-33
3-12. CCD FLEX. CARD SCHEMATIC DIAGRAM 3-35
3-13. HEAD AMP SCHEMATIC DIAGRAM 3-36
3-14. DRIVE SCHEMATIC DIAGRAM 3-37
3-15. POWER SCHEMATIC DIAGRAM 3-39
3-16. VTR MAIN CONNECTION SCHEMATIC DIAGRAM 3-41
3-17. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM 3-45
3-18. VIDEO 1 SCHEMATIC DIAGRAM 3-53
3-19. VIDEO 2 SCHEMATIC DIAGRAM 3-57
3-20. LCD SCHEMATIC DIAGRAM 3-61
3-21. DIGITAL I/F SCHEMATIC DIAGRAM 3-63
3-22. AUDIO SCHEMATIC DIAGRAM 3-64
3-23. SOUND TITLE SCHEMATIC DIAGRAM 3-65
3-24. FRONT SCHEMATIC DIAGRAM 3-66
3-25. TOP OPERATION SCHEMATIC DIAGRAM 3-67
3-26. REAR OPERATION SCHEMATIC DIAGRAM 3-67
3-27. LCD I/F SCHEMATIC DIAGRAM 3-68
3-28. MONITOR SCHEMATIC DIAGRAM FOR NV-DS5 3-69
3-28. SENSOR FLEX. CARD SCHEMATIC DIAGRAM FOR NV-DS5 3-69
3-29. E.V.F. SCHEMATIC DIAGRAM 3-71
3-30. CCD FLEX. CARD C.B.A. 3-72
3-31. TOP OPERATION C.B.A. 3-72
3-32. FRONT C.B.A. 3-73
3-33. CAMERA [Camera Connection, Sensor, Lens Drive Section] C.B.A. 3-75
3-34. VTR MAIN [VTR Main Connection, System Control & Servo, Video 1,
Video 2, LCD, Digital I/F, Audio, Sound Title Section] C.B.A. 3-79
3-35. REAR OPERATION C.B.A. 3-86
3-36. POWER C.B.A. 3-87
3-37. HEAD AMP C.B.A. 3-89
3-38. DRIVE C.B.A. 3-90
3-39. LCD I/F C.B.A. 3-91
3-40. MONITOR C.B.A. FOR NV-DS5 3-92
3-41. EVF (A) C.B.A. 3-93
3-42. EVF (B) C.B.A. 3-93
SECTION 4 EXPLODED VIEWS & PARTS LIST 4-1
4-1. EXPLODED VIEWS & MECHANICAL REPLACEMENT PARTS LIST 4-1
    1. FRAME & CASING PARTS SECTION (1) FOR NV-DS1 4-1
    1. FRAME & CASING PARTS SECTION (1) FOR NV-DS5 4-3
    2. FRAME & CASING PARTS SECTION (2) FOR NV-DS1 4-4
    2. FRAME & CASING PARTS SECTION (2) FOR NV-DS5 4-6
    3. LCD PARTS SECTION FOR NV-DS5 4-7
    4. CAMERA LENS SECTION 4-8
    5. PACKING PARTS & ACCESSORIES SECTION 4-9
4-2. ELECTRICAL REPLACEMENT PARTS LIST 4-11

INTRODUCTION

Caution for AC CORD (VJA0940 type)

Information for Your Safety

IMPORTANT
YOUR ATTENTION IS DRAWN TO THE FACT THAT RECORDING OF PRE-RECORDED TAPES OR DISCS OR OTHER PUBLISHED OR BROADCAST MATERIAL MAY INFRINGE COPYRIGHT LAWS.

WARNING
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FOR YOUR SAFETY
■ DO NOT REMOVE THE OUTER COVER.
To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ◈ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFETY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

■ IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

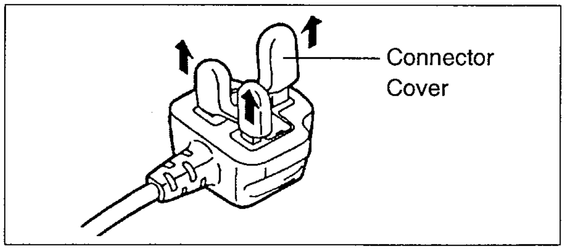
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol ⏚ .

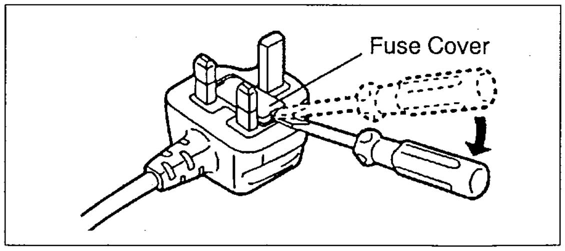
■ Before use

Remove the Connector Cover as follows.

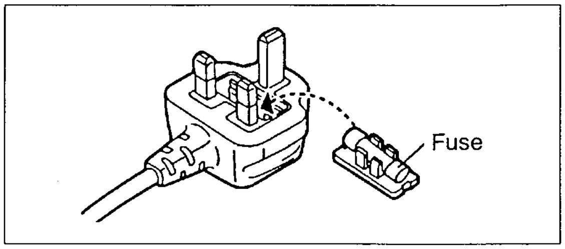


■ How to replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.

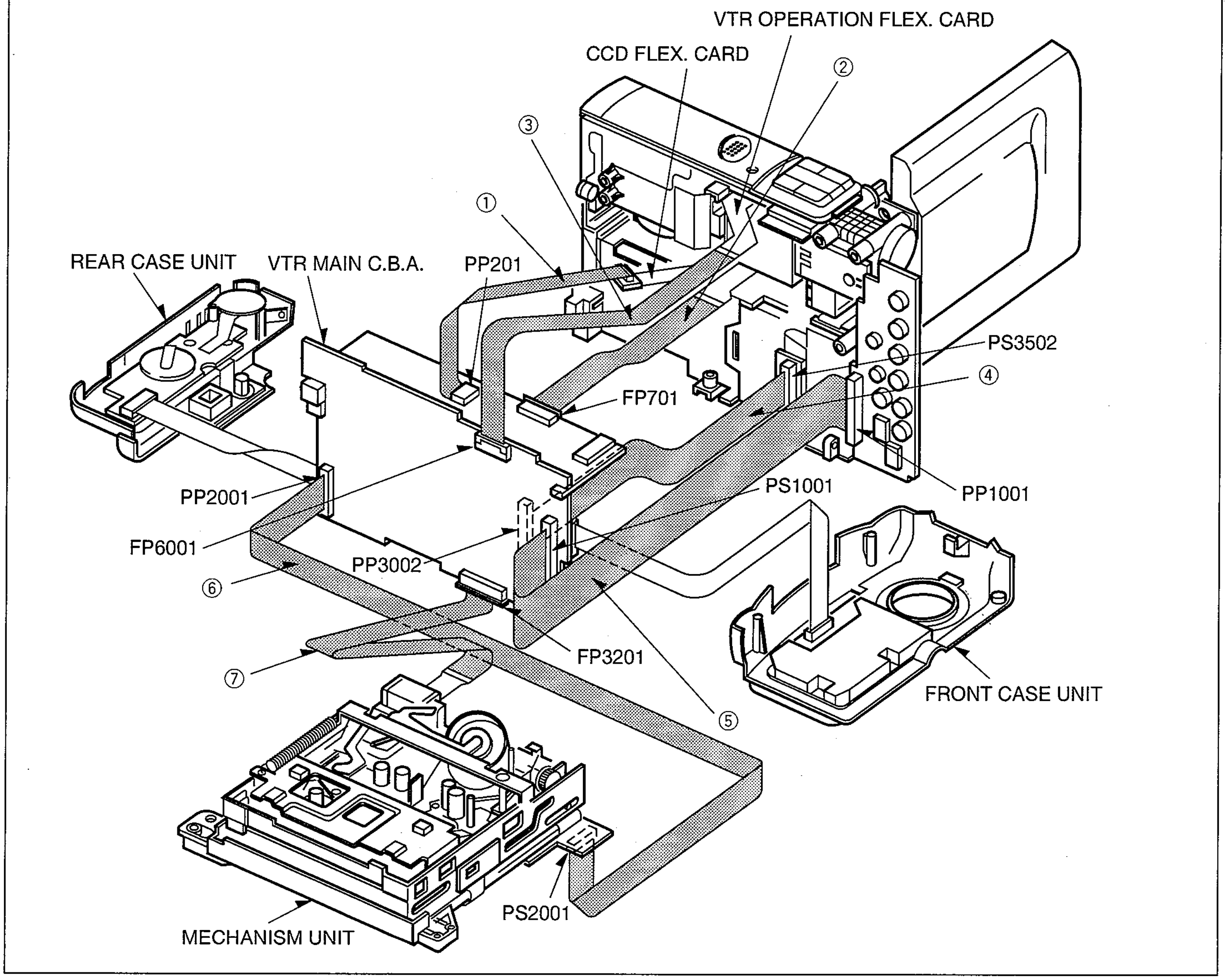


Service Information

1. Service Extension Cables

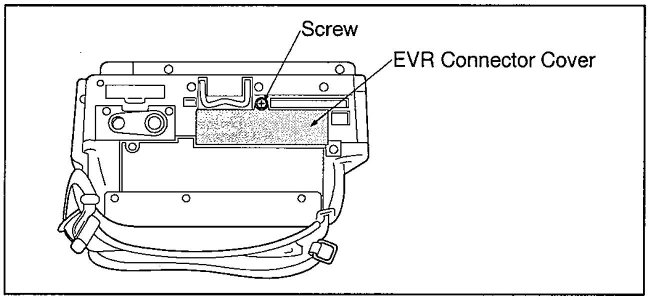
No.	Part No.	Pin	Part Name	Connection	Q'ty	Remarks
①	VFK0929	12	12 Pin Flat Cable	PP201–CCD	1	
②	VFK0977	20	20 Pin Flat Cable	FP701–CCD	1	
③	VFK1364	14	14 Pin Flat Cable	FP6001–Top Operation	1	
④	VFK1365	70	70 Pin Flat Cable	PP3002–PS3502	1	
⑤	VFK1311	80	80 Pin Flat Cable	PS1001–PP1001	1	
⑥	VFK1367	50	50 Pin Flat Cable	PP2001–PS2001	1	
⑦	VFK1284	24	24 Pin Flat Cable	FP3201–H/R AMP.	1	

2. Service Position


VTR OPERATION FLEX. CARD
CCD FLEX. CARD
②
③
①
REAR CASE UNIT
VTR MAIN C.B.A.
PP201
PS3502
④
FP701
PS1001
PP1001
PP2001
FP6001
PP3002
⑥
FP3201
⑦
⑤
FRONT CASE UNIT
PS2001
MECHANISM UNIT

3. Preparation for Electrical Adjustment

Remove Screw and EVR Connector Cover which is located on the bottom side of the unit as follows.

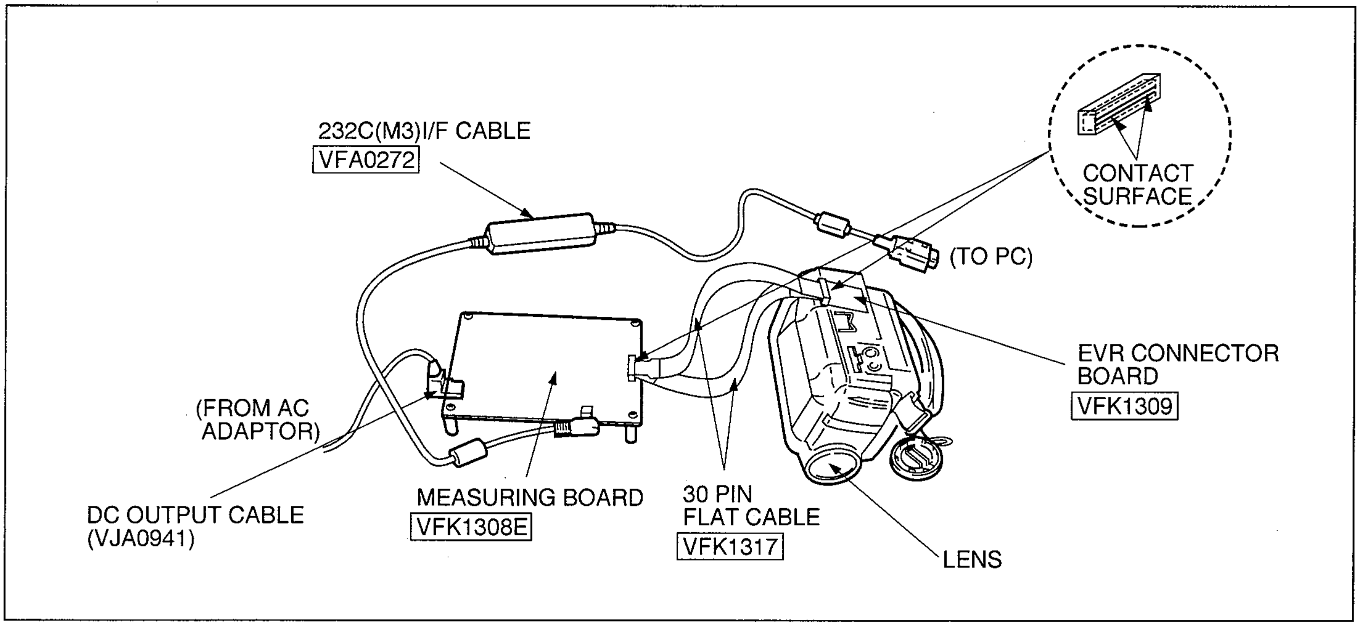


Screw
EVR Connector Cover

Fig. E1

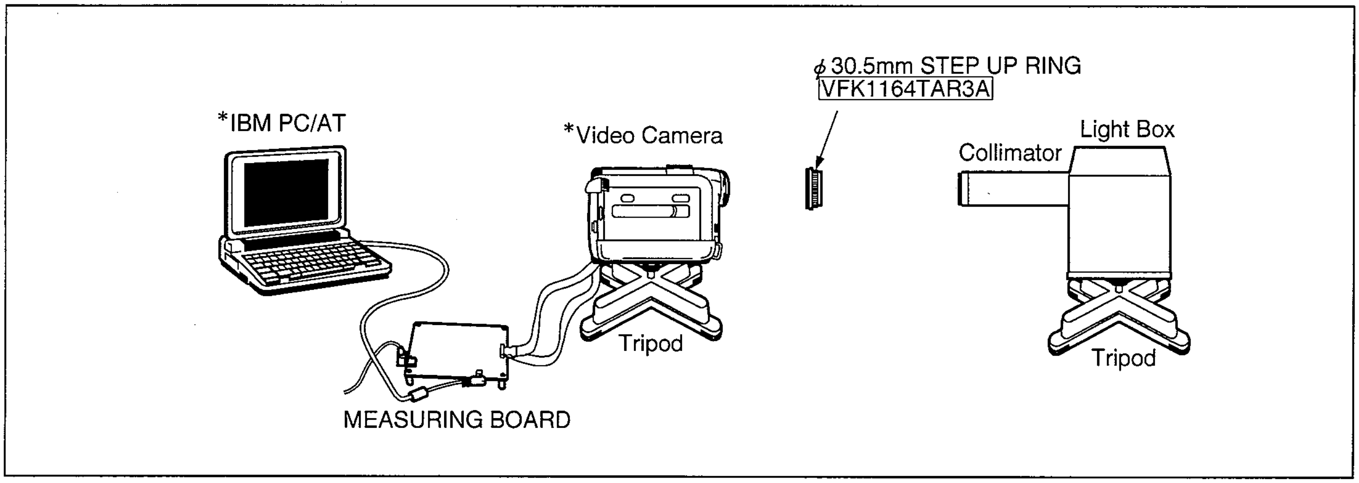
Then connect the following cables as shown in Fig. E2.

Part No.	Part Name	Q'ty	Remarks
VFA0272	232C (M3) I/F CABLE	1	
VFK1308E	MEASURING BOARD	1	
VFK1309	EVR CONNECTOR BOARD	1	
VFK1317	30 PIN FLAT CABLE	2	
VJA0941	DC OUTPUT CABLE	1	For AC Adapter
VFK1164TAR3A	STEP UP RING (ϕ30.5 mm)	1	For Collimator



232C(M3)I/F CABLE
VFA0272
CONTACT SURFACE
(TO PC)
EVR CONNECTOR BOARD
VFK1309
(FROM AC ADAPTOR)
DC OUTPUT CABLE (VJA0941)
MEASURING BOARD
VFK1308E
30 PIN FLAT CABLE
VFK1317
LENS

Fig. E2



*IBM PC/AT
*Video Camera
ϕ30.5mm STEP UP RING
VFK1164TAR3A
Light Box
Collimator
Tripod
Tripod
MEASURING BOARD

Fig. E3

4. Electrical View Finder (EVF)

The angle of the View Finder can be adjusted upward until 90 degree.
However, be sure to slide it backward until it stops, before turning the Finder upward.

Although the View Finder can be shifted until 90 degree, when pushing the View Finder more than 90 degree, the projection of the EVF Case (R) to lock the Finder Case might be broken as shown in Fig. C.

In this case, you can replace the EVF Case (R) only for this repairing as follows.

1 Remove the Slide Case by unlocking the tab. (Fig. A)
2 Push up the EVF Unit. Then remove 2 Screw (A). (Fig. B)
3 Remove the Black Screw (B) and EVF Case (R). (Fig. C)

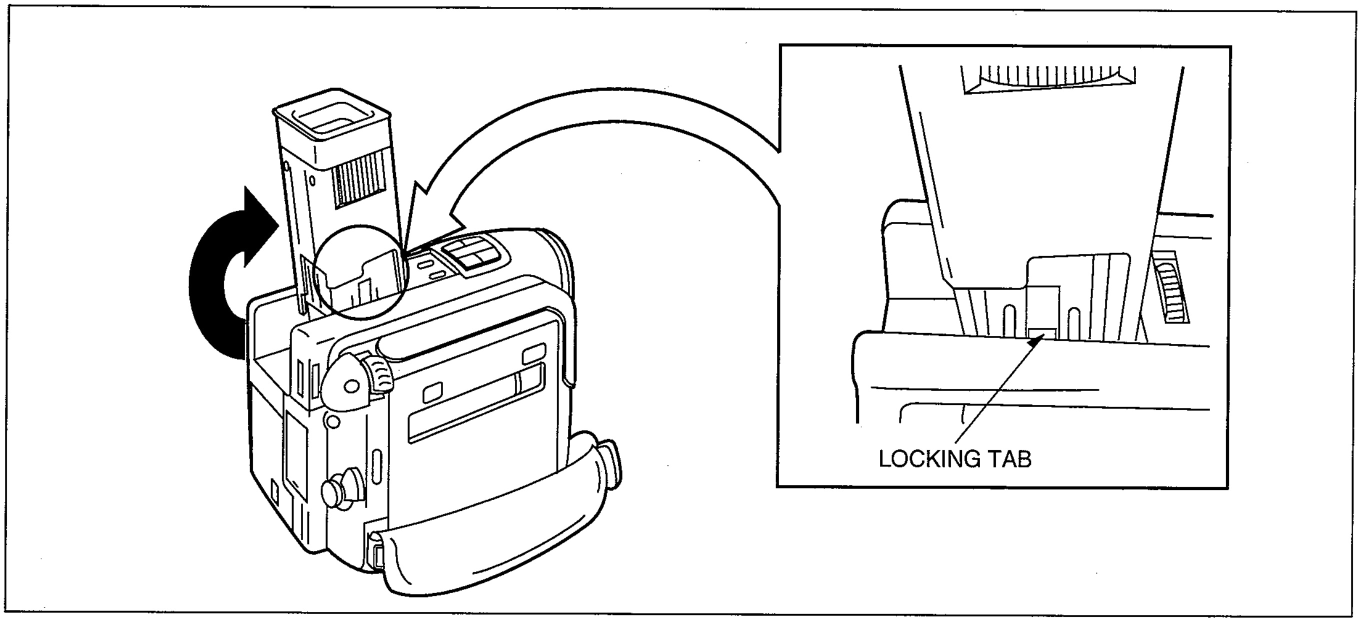


Fig. A

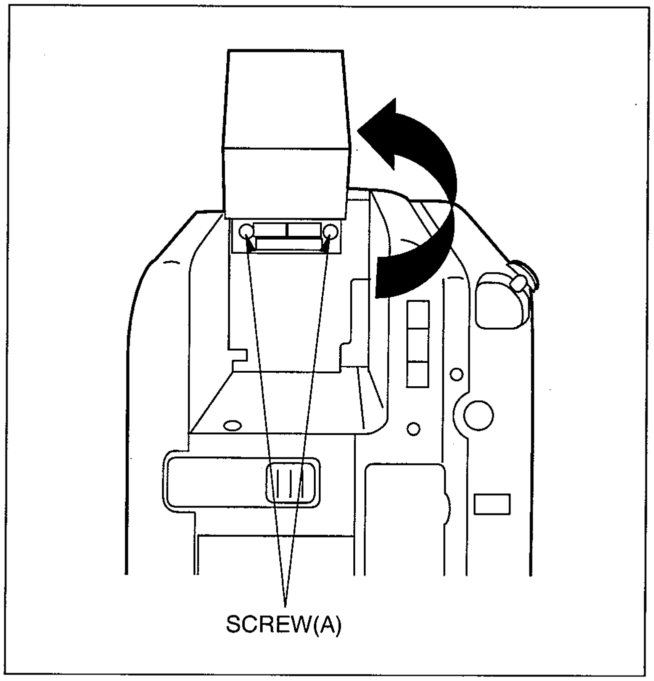


Fig. B

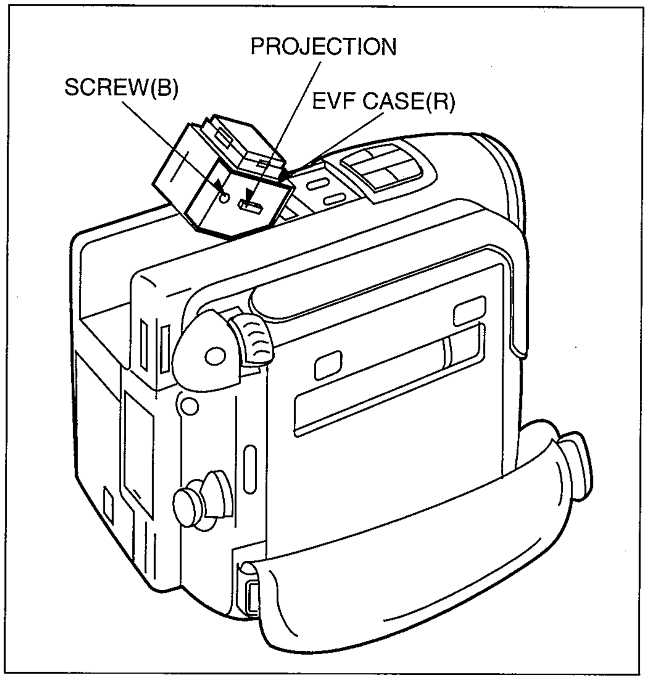
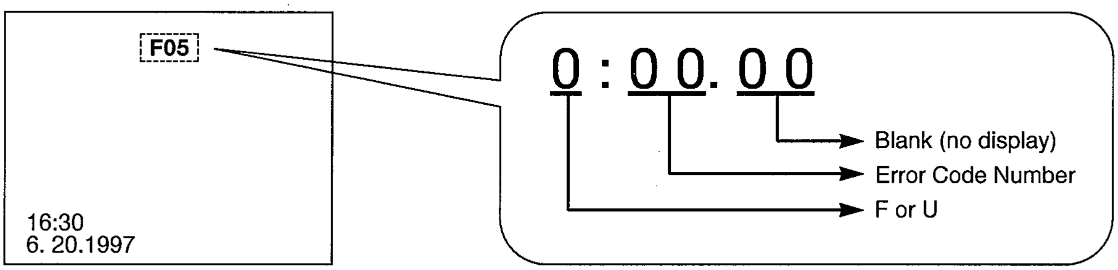


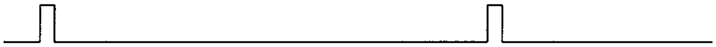
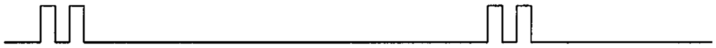
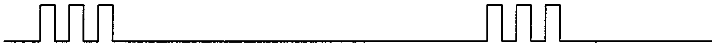
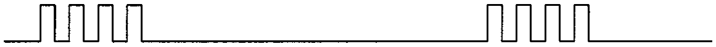
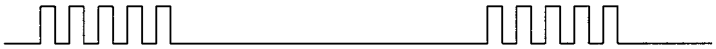
Fig. C

5. Service Mode

When undesirable conditions occurred, the error code is displayed on the E.V.F. or LCD Monitor (NV-DS5).
Also, the Camera LED is flashed according to the error code as follows.



E.V.F. or LCD Monitor

DISPLAY	CONDITION	POWER OFF TIMING / POWER LED FLASHING TIMING
F01	T-Reel Lock	After 1 minute flashing the LED 
F02	S-Reel Lock	After 1 minute flashing the LED 
F03	Unloading Lock	After 1 minute flashing the LED 
F04	Loading Lock	After 1 minute flashing the LED 
F05	Cylinder Lock	After 1 minute flashing the LED 
F31	Data Transmission Error	Not turning OFF
F51	Focus Motor Lock	Not turning OFF Power LED is flashed at 1 Hz timing
F52	Zoom Motor Lock	Not turning OFF Power LED is flashed at 1 Hz timing
U10	Dew Detection	After 18 seconds flashing the LED Power LED is flashed at 1 Hz timing
U11	Head Clogging	Not turning OFF

6. HOW TO REPLACE THE LITHIUM BATTERY
(PROCEDURE)

1.Remove the Rear Operation C.B.A. from Rear Case. (Refer to Disassembly Procedures)
2.Unsolder the Lithium battery "VL2020/1HF" and then replace the new one. (See Fig.B1)

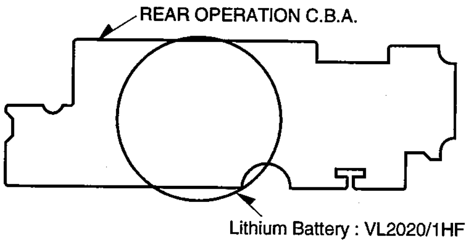


Fig.B1

NOTE:

The lithium battery is a critical component (Type No.: VL2020/1HF Manufactured by Panasonic.)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in equipment designed specifically for its use.
Replacement batteries must be of the same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

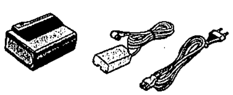
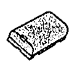
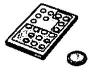
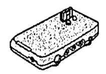
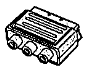
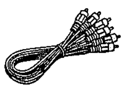
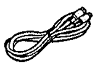
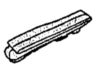
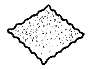
ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

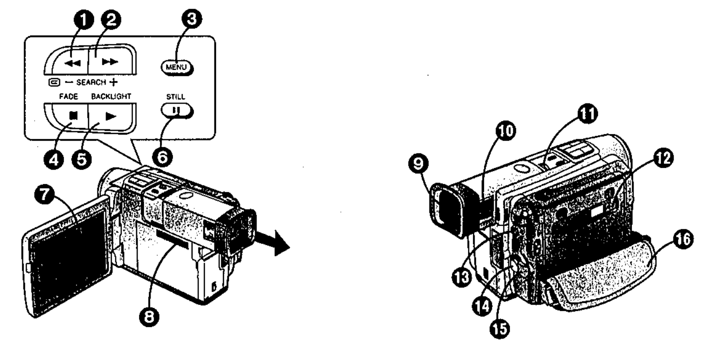
SECTION 1
GENERAL DESCRIPTIONS

1. 	2. 	3. 
4. 	5. 	6. 
7. 	8. 	9. 

Standard Accessories

1. **AC Adaptor (→ 16, 18)**
   To supply power to the Movie Camera.
   To charge the Battery.
   DC Input Cable and AC Mains Cable (→ 16, 18)
   To connect the AC Adaptor to the Movie Camera and to an AC mains socket.
2. **Battery Pack (→ 18)**
   To supply the Movie Camera with power.
3. **Remote Controller and Button-Type Battery (→ 94, 100)**
4. **Output Terminal Box [AV ONE TOUCH STATION] (→ 54, 104)**
   Equipped with AV Sockets, Edit Socket and Digital Still Picture Terminal and Headphones Socket.
5. **21-pin Adaptor (→ 106, 108, 110)**
6. **AV Cable (→ 106, 108, 110)**
7. **S-Video Cable (→ 106, 108, 110)**
8. **Shoulder Strap (→ 28)**
9. **Cleaning Tissue**
   For cleaning the Lens and the Monitor.

Controls and Components



① **Reverse Search Button/Rewind/Review Button/Recording Check Button [◄◄] (→ 32, 46, 48, 58)**

② **Forward Search Button/Fast Forward/ Cue Button [►►] (→ 48, 58)**

③ **Menu Button [MENU] (→ 42,120)**

④ **Fade Button/Stop Button [■] (→ 46, 68)**

⑤ **Backlight Button/Play Button [►] (→ 32, 46)**

⑥ **Still Button/Pause Button [II] (→ 44, 52)**

⑦ **LCD Monitor (→ 26)**

⑧ **Speaker (→ 46)**

⑨ **Finder (→ 26)**

⑩ **Eyepiece Corrector Dial (→ 26)**

⑪ **Multi-Function [PUSH] Dial (→ 36, 46, 52, 76, 82, 84, 86, 88, 120)**

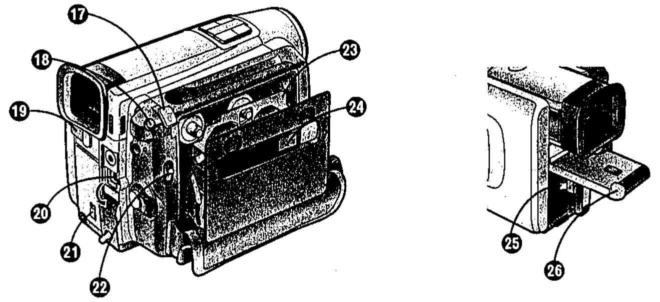
⑫ **Cassette Compartment Lock Button [△LOCK] (→ 22)**

⑬ **VCR (Playback) Mode/Camera (Recording) Mode Button (and Lamps) (→ 30, 46)**

⑭ **Recording Start/Stop Button (→ 30)**

⑮ **Power Switch [POWER ON/OFF] (→ 26, 30)**

⑯ **Grip Belt (→ 28)**



⑰ **Zoom Lever [W/T] (→ 38)**

⑱ **Photoshot Button [PHOTO SHOT] (→ 40)**

⑲ **LCD Monitor Open Lever [PUSH OPEN] (→ 26)**

⑳ **DV Terminal [DV]**
To output digital signals.
Connect it to digital video equipment with IEEE1394-compatible DV input terminal.
- This terminal cannot be used to input digital signals into this Movie Camera.

㉑ **Battery Compartment Cover Open Lever [▲BATTERY] (→ 18)**

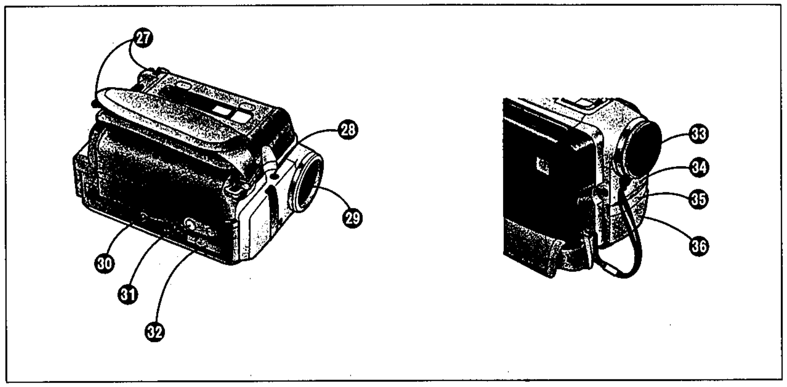
㉒ **Cassette Eject Button [⏏EJECT] (→ 22)**

㉓ **Cassette Compartment (→ 22)**

㉔ **Cassette Compartment Window (→ 22)**

㉕ **Battery Eject Lever (→ 18)**

㉖ **Cover for DC Input Cable Slot (→ 16)**



㉗ **Shoulder Strap Holders (➜ 28)**

㉘ **Microphone Socket [MIC]**
To connect an external microphone or audio equipment. (Connecting to this socket deactivates the built-in microphone.)

Socket:	M3-type
Impedance:	Less than 4.7 kohm
Type:	Stereo (When connecting a mono microphone, no sound is recorded on the right channel.)
Sensitivity:	Approx. –70 dB
Power Source for Microphone:	Unnecessary

㉙ **Lens**

㉚ **Support Leg (➜ 46)**

㉛ **Tripod Receptacle**
To mount the Movie Camera on an optional tripod.

㉜ **Multi Terminal [MULTI] (➜ 54, 104)**

㉝ **Lens Cap (➜ 56,84)**

㉞ **Recording Lamp (➜ 30)**

㉟ **White Balance Sensor (➜ 154)/Remote Control Sensor (➜ 102)**

㊱ **Microphone (built-in, stereo)**

The 3 Types of Power Supplies

1) AC Adaptor (supplied) to supply power from an AC mains socket
2) Car Battery Charger (optional) to supply power from a Cigarette Lighter Socket
3) Battery (supplied) (➜ 18)

■ Supplying Power from an AC Mains Socket

1 Slide the [▲BATTERY] Lever upward to open the Battery Compartment Cover.

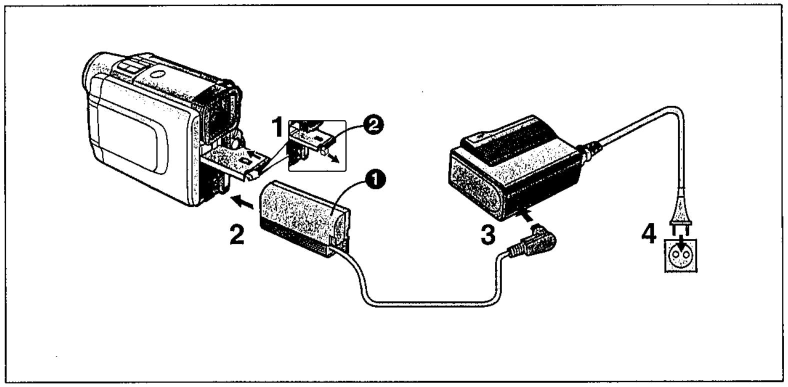
2 Insert the battery-shaped connector of the DC Input Cable ❶ into the Movie Camera.
Pull back the Cover for DC Input Cable Slot ❷ and lift it Pass the DC Input Cable through this slot and close the Battery Compartment Cover.

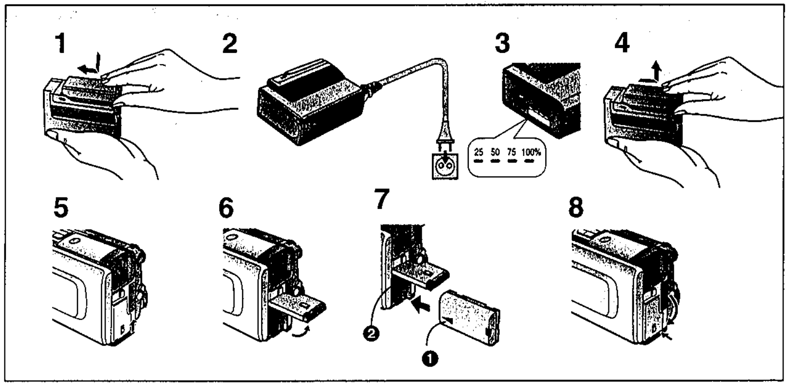
3 Connect the other end of the DC Input Cable to the AC Adaptor.

4 Connect the AC Mains Cable to an AC mains socket.
- Before disconnecting the AC Mains Cable, set the [POWER ON/OFF] Switch to [OFF].
- **If you use the Movie Camera for a long time, it becomes warm. However, this is normal.**

■ Supplying Power from the Cigarette Lighter Socket in a Car

You can use the optional Car Battery Charger VW-KBD1E to supply the Movie Camera with power from the Cigarette Lighter Socket in a car.
In addition, you can also use it to charge the Movie Camera's Battery.
- **After use, be sure to disconnect the Car Battery Charger from the Cigarette Lighter Socket.**
- Be sure to start the car engine before you connect the Car Battery Charger, otherwise the fuse may blow.





■ Supplying Power with the Battery

The Battery was only minimally charged before shipping. Therefore, fully charge it before you use it for the first time.

1 Place the Battery on the AC Adaptor as shown above and slide it horizontally until it stops.

2 Connect the AC Mains Cable to the AC Adaptor and an AC mains socket.

3 When all four Charge Lamps are lit, charging is finished.

4 Remove the Battery by sliding it in the opposite direction of Step 1 above.
- Also disconnect the AC Mains Cable.

5 Slide the [▲BATTERY] Lever.

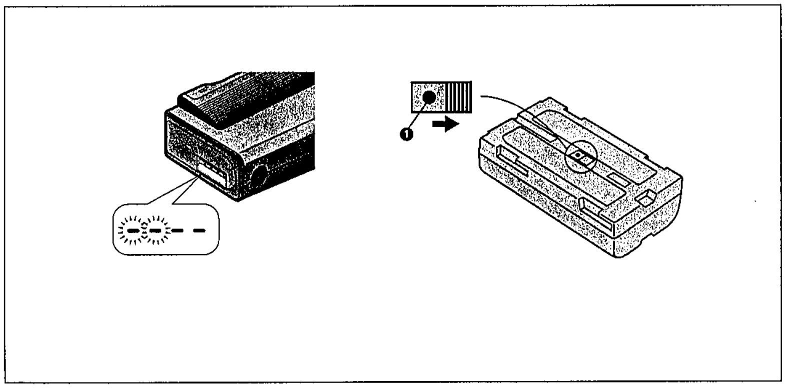
6 Open the Battery Compartment Cover.

7 Insert the Battery with ❶ pointing inside.

8 Close the Battery Compartment Cover so that it locks with a click.

Removing the Battery
Open the Battery Compartment Cover and push the Battery Eject Lever ❷.
- Hold your hand over the Battery Compartment Cover to prevent the Battery from dropping.
- Before removing the Battery, set the [POWER ON/OFF] Switch to [OFF].

Caution
Be sure to insert the Battery with the [▲] mark pointing into the Movie Camera. If you insert it with the mark pointing outside, it could damage the Movie Camera.



Charging Time and Maximum Time for Continuous Recording

Battery No.	Charging Time	Max. Continuous Recording Time
Supplied	80 min.	100 min. (75 min.)
VW-VBD1	80 min.	100 min. (75 min.)
VW-VBD2	160 min.	180 min. (140 min.)
CGR-B/814	320 min.	420 min. (330 min.)

(The times shown in the above chart are approximations. The figures in parentheses show the recording time when using the LCD Monitor.)
The times listed above for your information indicate the duration of recording performed at an ambient temperature of 20°C and 60% relative humidity. The charging time may be longer when you charge the Battery at higher or lower temperature.

- ♦ During use and charging, the Battery becomes warm. The Movie Camera, too, becomes warm during use.
- ♦ When you repeatedly stop and restart recording, the recording time per Battery may be shorter than listed above.
- ● If you do not use the Battery for a long time, please read the Precautions for Storage (➔ 144).

When the Charge Lamps Flash

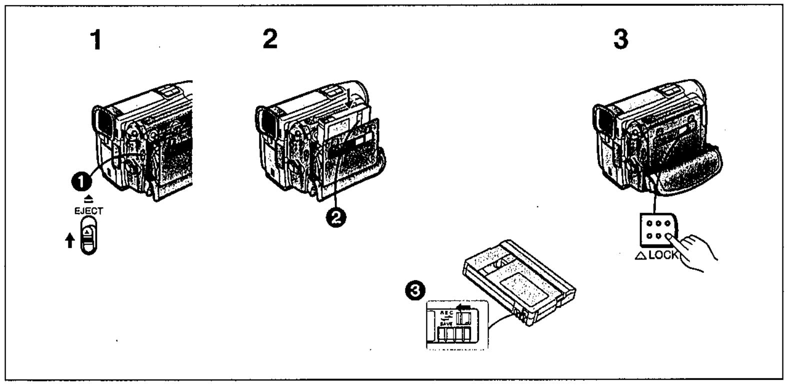
When the internal temperature of the Battery or the ambient temperature is extremely high or low, the Charge Lamps on the AC Adaptor flash.

When the Charge Lamps flash slowly
The Battery is being charged, but charging takes longer than normally.

When the Charge Lamps flash in groups of 2
Charging is not possible. When the temperature becomes appropriate for charging, the Charge Lamps stop flashing and charging starts.

Using the Charge Confirmation Marker

You can use this marker to easily distinguish between charged and discharged Batteries.
For example, slide the knob so that the red dot (●) ❶ is visible after the charging is completed.



Inserting the Cassette

1 Slide the [≜ EJECT] Lever ❶ upward to open the Cassette Compartment.

2 Insert the cassette.
Insert the cassette with its window in position ❷.

3 Close the Cassette Compartment and press the [△LOCK] Button to lock the Cassette Compartment.

- ● If the Movie Camera is supplied with power, Step 1 can be operated without turning on the Movie Camera.
- ♦ When opening or closing the Cassette Compartment, push down the Grip Belt so that it does not obstruct the opening and closing of the Cassette Compartment. Otherwise the Grip Belt may prevent the Cassette Compartment from opening completely, or it may get caught under the Cassette Compartment Cover and prevent it from closing properly.
- ♦ When inserting the cassette, make sure it faces in the right direction and then push in straight down until it stops.
- ● When you insert a cassette onto which you have recorded before, use the Camera Search Function (➔ 58) to search for the position from which you want to continue recording.
- ● When you insert a new cassette, rewind the tape to the beginning before starting to record.

Preventing Accidental Erasure of Recordings
Opening the cassette's erasure prevention slider ❸ (sliding it in the direction of the [SAVE] arrow) prevents recording. To record again, close the erasure prevention slider (slide it in the direction of the [REC] arrow).

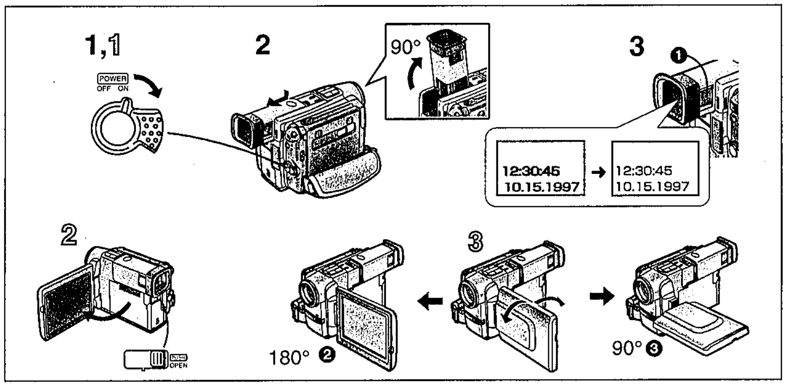
■ LP Mode

The desired recording speed can be selected with [REC SPEED] on the [MENU (OTHERS)] Menu. (➔ 120-124)

If you select the [LP] Mode, the possible recording time is 1.5 times as long as in the SP Mode.
Recording in the LP mode does not deteriorate the picture quality. However, the playback picture may contain mosaic-like patterns and functions may be restricted.

- ● In the following cases, mosaic-like patterns may appear in the playback picture or the picture may not be played back correctly.
  - • When a cassette recorded in the LP Mode on this Movie Camera is played back on other digital video equipment.
  - • When a cassette recorded in the LP Mode on other digital video equipment is played back on this Movie Camera.
  - • When a cassette recorded in the LP Mode on this Movie Camera is played back on digital video equipment not featuring the LP Mode.
  - • In the Slow Motion or Still Advance Playback Mode. (➔ 50, 52)
  - • When using the Camera Search Function. (➔ 58)
- ● As the recording track width in the LP Mode is smaller than the head width, recording new sound onto an already recorded cassette (audio dubbing) (➔ 90) is impossible.

NV-DS5 ONLY



Using the Finder

Before using the Finder, adjust it to your eyesight so that the indications in the Finder are clear and easy to read.

1 **Set the [POWER ON/OFF] Switch to [ON].**

2 **Slide the Finder backward.**
The angle of the Finder can be adjusted upward. However, be sure to slide it backward until it stops, before turning the Finder upward.

3 **Adjust by turning the Eyepiece Corrector Dial ❶.**
You can adjust the brightness of the Finder on the [MENU (OTHERS)] Menu. (➜ 120-124, 132)

Using the LCD Monitor

It is also possible to record while viewing the picture on the opened LCD Monitor.

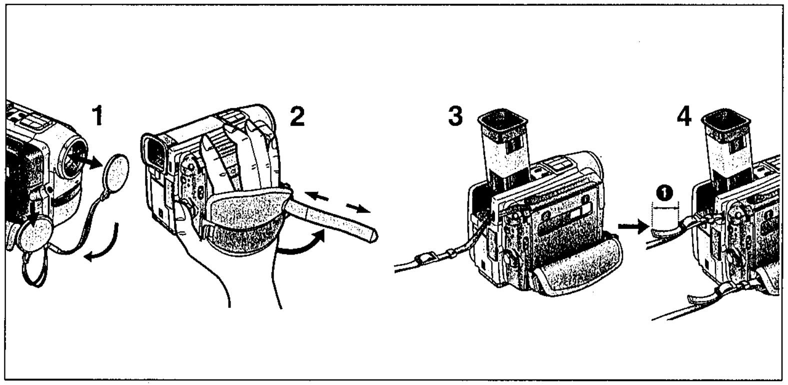
① **Set the [POWER ON/OFF] Switch to [ON].**

② **Push the [PUSH OPEN] Lever and turn out the LCD Monitor approximately 90° in the direction of the arrow.**
The Finder turns off.

Adjusting the Angle

③ **Adjust the angle of the LCD Monitor according to the recording angle**
- The LCD Monitor rotates upward a maximum of 180° ❷ and downward a maximum of 90° ❸ from its normal vertical position. Trying to forcefully rotate it beyond this range could seriously damage the Movie Camera.
- You can adjust the colour and brightness of the LCD Monitor on the [MENU (OTHERS)] Menu. (➜ 120-124, 132)

Closing the LCD Monitor
Push the LCD Monitor close until the [PUSH OPEN] Lever locks with a click.



Handling the Lens Cap

Before you start recording, remove the lens cap.

1 **You can hook the removed Lens Cap onto the Grip Belt.**
When not actually recording, attach the Lens Cap to the Lens to protect it.

Adjusting the Grip Belt

You can adjust the Grip Belt to the size of your hand.

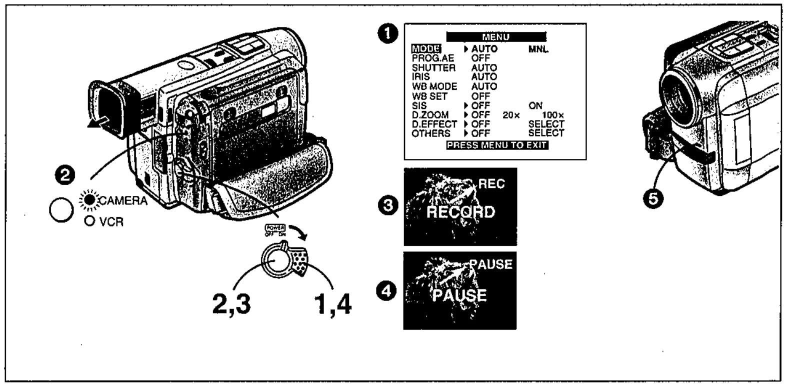
2 **Open the Grip Belt Cover and adjust the length of the Grip Belt.**

Attaching the Shoulder Strap

Before you go recording outside, we recommend that you attach the Shoulder Strap to prevent the Movie Camera from dropping accidentally.

3 **Pull one end of the Shoulder Strap through one of the Shoulder Strap Holders on the Movie Camera.**

4 **Fold the end of the Shoulder Strap back and pull it through the Shoulder Strap Length Adjuster.**
Pull it out more than 2 cm ❶ from the Shoulder Strap Length Adjuster so that it cannot slip off.



```
            MENU
MODE       ▶ AUTO          MNL
PROG.AE      OFF
SHUTTER      AUTO
IRIS         AUTO
WB MODE      AUTO
WB SET       OFF
SIS        ▶ OFF           ON
D.ZOOM     ▶ OFF    20×      100×
D.EFFECT   ▶ OFF           SELECT
OTHERS     ▶ OFF           SELECT
      PRESS MENU TO EXIT
```

Recording

When [MODE] on the Menu has been set to [AUTO] ❶ (➜ 120, 122), you can simply turn on the Movie Camera and press the Start/Stop Button to start recording, and the focus and white balance are adjusted automatically.
- Depending on the light source and recording situation, correct automatic focusing and white balance adjustment may not be possible. In such cases, adjust them manually.
(Focus: ➜36) (White Balance:➜ 82, 84)

1 **Set the [POWER ON/OFF] Switch to [ON].**
The [CAMERA] Lamp lights.❷

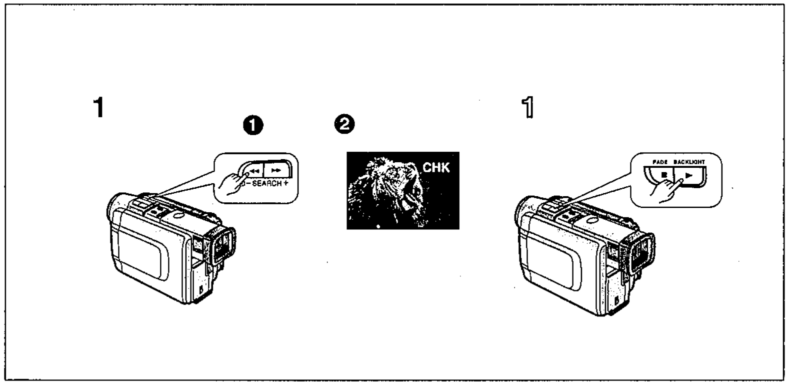
2 **Press the Start/Stop Button.**
Recording starts.
The [RECORD] Indication appears briefly and then changes to [REC].❸

3 **To pause recording:**
Press the Start/Stop Button again.
The [PAUSE] Indication appears.❹

4 **To finish recording:**
Set the [POWER ON/OFF] Switch to [OFF].

- **If you leave the Movie Camera in the Recording Pause Mode for more than 6 minutes, it automatically switches off to protect the tape and to conserve battery power. To resume recording from this condition, set the [POWER ON/OFF] Switch to [OFF] and then to [ON] again.**

Recording Lamp
The Recording Lamp lights ❺ during recording to indicate that recording is being performed.
If you select [OTHERS] on the Menu and set [REC LAMP] to [OFF], the Recording Lamp does not light.
(➜ 120-124)



Checking If the Picture Is Recorded
(Recording Check)

To play back the final few seconds of the last recorded scene in the Recording Pause Mode.

1 Press the Reverse Search Button [◀◀] ❶ briefly in the Recording Pause Mode.

The [CHK] Indication appears ❷.
After checking, the Movie Camera returns to the Recording Pause Mode.

- To check the last recorded scene, use the same mode as the one you used for recording (SP or LP). If you use the other mode, the playback picture is distorted.

Recording Backlit Scenes
(Backlight Compensation)

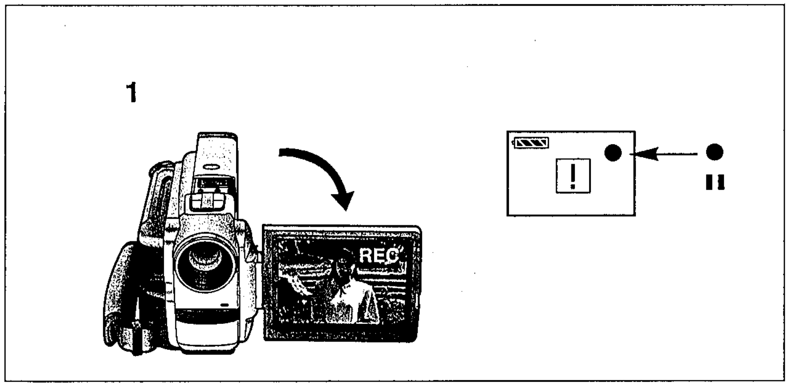
To prevent the backlit subject from being recorded very dark.
(Backlight means that the light falls on the subject from behind.)

1 Keep the Backlight Button [▶] pressed.

The backlight is being compensated as long as you keep the Button pressed, and the subject is recorded more brightly.
(The picture brightens up as a whole.)

Returning to Normal Recording
Release the Backlight Button [▶]

NV-DS5 ONLY



Recording Yourself
(Recording with the LCD Monitor Facing Forward)

To record yourself while viewing the picture on the LCD Monitor or to show the persons in front of the movie camera the picture being recorded.

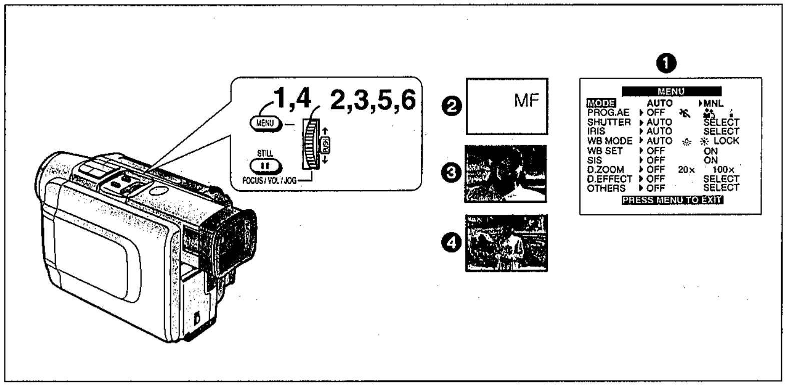
1 Open the LCD Monitor and turn it so that it faces forward (lens side).
Opening the LCD Monitor automatically turns off the Finder. However, when you turn the LCD Monitor forward, the picture also appears in the Finder.
You can aim the Movie Camera and view the picture in the Finder, while the persons in front of the movie camera can check the picture on the LCD Monitor during recording.

Mirror Mode
When recording yourself with the LCD Monitor facing forward, the picture as it is being recorded might look unusual too you. If you prefer seeing yourself on the LCD Monitor the way you see yourself in a mirror, select the Mirror Mode:
Selecting [OTHERS] on the Menu and then setting [SELFSHOOT] to [MIRROR] reverses the picture on the LCD Monitor and shows it as a mirror-image.
(➜ 120-124)
However, even if you record in the Mirror Mode, the picture is recorded in the normal way.

- In the Mirror Mode,only the following indications are displayed.

● : Recording
●❚❚ : Recording Pause Mode
▭ : Remaining Battery Power

When the General Warning/Alarm Indication [!] appears, turn the LCD Monitor backward so that you can confirm the actual Warning/Alarm Indication.



Manually Focusing on the Subject
(Manual Focus)

To adjust the focus manually for subjects and recording situations for which automatic focusing is not precise.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select [MODE].

3 Press the [PUSH] Dial to select [MNL] ❶.

4 Press the [MENU] Button to exit the Menu.

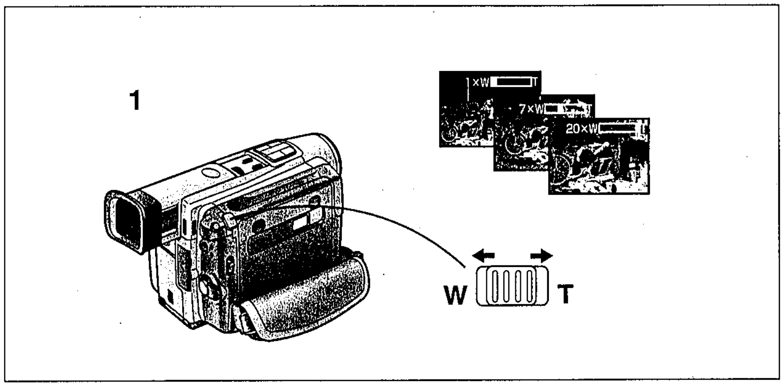
5 Keep the [PUSH] Dial pressed until the [MF] Indication ❷ appears.

6 Turn the [PUSH] Dial until the subject is sharp.

Changing Back to Automatic Focusing
Keep the [PUSH] Dial pressed until the [MF] Indication disappears.

Hint for Manual Focus Adjustment

- If you adjust the focus in the wide-angle setting, the subject may go out of focus when it is enlarged. Therefore, enlarge the subject ❸ before you adjust the focus, so that the picture remains focused ❹.



Enlarging Your Subject or Widening the Recording Angle
(Zooming In/Out)

Recording close-ups of your subjects and recording a wide-angle shots adds special effects to your videos.

1 To record a wider view (Zooming-out): Push the [W/T] Zoom Lever toward [W]. To enlarge your subject (Zooming-in): Push the [W/T] Zoom Lever toward [T].

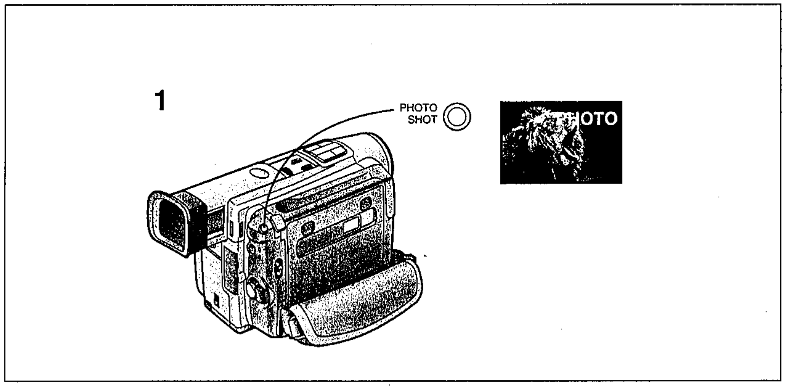
- The Zoom Magnification Indication appears for a few seconds.
- The farther you push the [W/T] Zoom Lever toward [W] or [T], the faster the zooming speed becomes.
- ♦ During recording, the zooming speed is slower than during recording pause.

Enlarging Your Subjects Even More (Digital Zooming)
Selecting one of the settings for [D.ZOOM] on the Menu makes it possible to further enlarge the subject.
(→ 120, 122)

- **20×:** Digital zooming up to 20×.
- **100×:** Digital zooming up to 100×.
- Up to 10×, the zooming is done optically.
- ♦ The higher the Digital Zoom Magnification is, the lower is the picture quality.
- ♦ If you set [D.ZOOM] on the Menu to [20×] or [100×], the [D.ZOOM] Indication appears.

Recording Extra Close-up Shots of Small Subjects (Macro Close-up Function)
When the zoom magnification is 1×, the Movie Camera can focus on subjects down to a distance of approximately 25 mm between lens and subject. This allows recording very small subjects such as insects.

- When you have zoomed to the tele setting, precise focussing is only possible on subjects no closer than 1.2 metres.



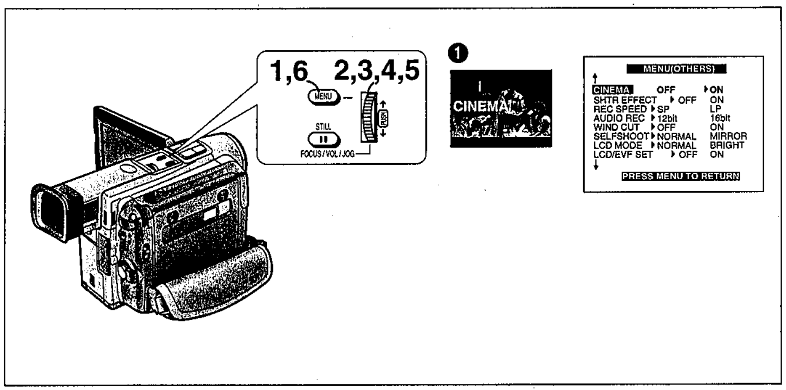
Using the Movie Camera as a Still Camera (Photoshot)

With this function, you can record still pictures with sound for approximately 7 seconds each.
This function is convenient for example for pictures that you want to print on a Video Printer.

1 Press the [PHOTO SHOT] Button. (This function can be used during recording, too.)

The Movie Camera records a still picture for approximately 7 seconds and then switches over to the Recording Pause Mode.

- The image on the LCD Monitor or in the Finder also stands still.
  If you select [OTHERS] on the Menu and set [SHTR EFFECT] to [ON], the screen blinks briefly and a simulated shutter click sound can be heard when you press the [PHOTO SHOT] Button.
- With the still pictures that you have recorded in the Photoshot Mode, you can do the following.
  - Index search (→ 62)
    (However, searching for the picture(s) recorded at the beginning of the tape may not be possible.)
  - Automatic printing (→ 114)
- ♦ If you select [OTHERS] on the Menu and set [SHTR EFFECT] to [ON], the visual shutter effect and the click sound are also recorded. (There is a slight delay between pressing the [PHOTO SHOT] Button and the actual start of recording.The visual shutter effect and click sound may occur with slight delay after recording of the still picture has started.)
- ♦ The picture quality deteriorates slightly.
- ♦ Using the Photoshot Function makes the Remaining Tape Time Indication disappear. Resuming the normal recording makes the Remaining Tape Time Indication appear again.



```
        MENU(OTHERS)
↑
CINEMA        OFF      ▸ON
SHTR EFFECT   ▸ OFF     ON
REC SPEED  ▸SP          LP
AUDIO REC  ▸12bit       16bit
WIND CUT   ▸OFF         ON
SELFSHOOT ▸NORMAL       MIRROR
LCD MODE   ▸NORMAL      BRIGHT
LCD/EVF SET   ▸ OFF     ON
↓
      PRESS MENU TO RETURN
```

Recording in the Cinema Mode
(Cinema Mode)

This mode lets you record in the cinema-like wide-screen format.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the the [PUSH] Dial to select [OTHERS].

3 Press the the [PUSH] Dial to select [SELECT].
The [MENU (OTHERS)] Menu appears.

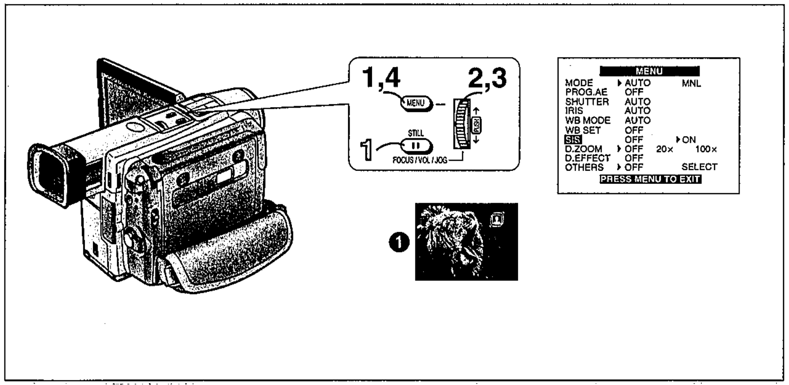
4 Turn the [PUSH] Dial to select [CINEMA].

5 Press the [PUSH] Dial to select [ON].

6 Press the [MENU] Button twice to exit the Menu.

- ♦ In the Cinema Mode, black bards appear at the top and bottom of the LCD Monitor and the Finder screen. ❶

Cancelling the Cinema Mode
Set [CINEMA] on the [MENU (OTHERS)] Menu to [OFF].



Recording with Minimised Camera Shake (Super Image Stabilizer)

In recording situations where shaking of the Movie Camera is likely to happen, for example when you have zoomed in on a distant subject or when you record while walking, you can use this function to stabilize the image.

- In case of very strong camera shake, it may not be possible to stabilize the picture.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select [SIS].

3 Press the [PUSH] Dial to select [ON].

4 Press the [MENU] Button to exit the Menu.
The [] Indication ❶ appears.

- In a dimly lit place, the Super Image Stabilizer Function may not work. In this case, the [] Indication flashes.
- Under fluorescent lamps, the picture brightness may fluctuate and the colours may be unnatural.
- The picture quality may deteriorate slightly.
- When you use a tripod, we recommend that you set [SIS] to [OFF].

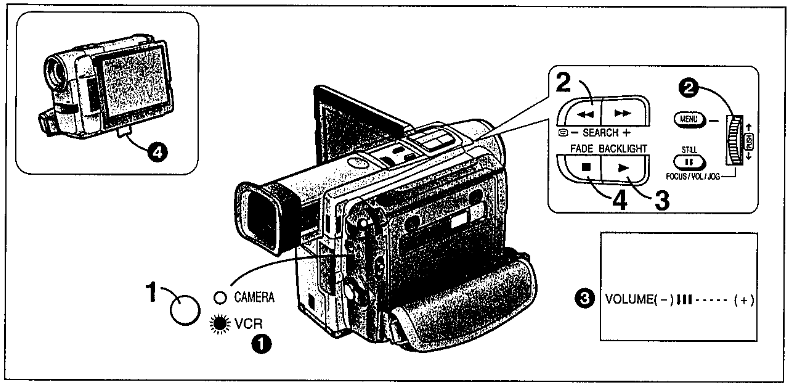
Cancelling the Super Image Stabilizer Function
Set [SIS] on the Menu to [OFF].

Recording Still Pictures

You can record still pictures of any desired length together with sound either in the middle of a normal recording or from the Recording Pause Mode.

1 Press the Still Button [❚❚].

Cancelling the Still Recording Mode
Press the Still Button [❚❚] again.



Viewing the Just Recorded Scenes on the Movie Camera (Playback)

You can play back recorded scenes right after recording.

1 Press the [VCR/CAMERA] Button so that the [VCR] Lamp ❶ lights.

2 Press the Rewind Button [◀◀] to rewind the tape.

- Rewind the tape to the point where the recording started.
- If the tape reaches the beginning, rewinding automatically stops.

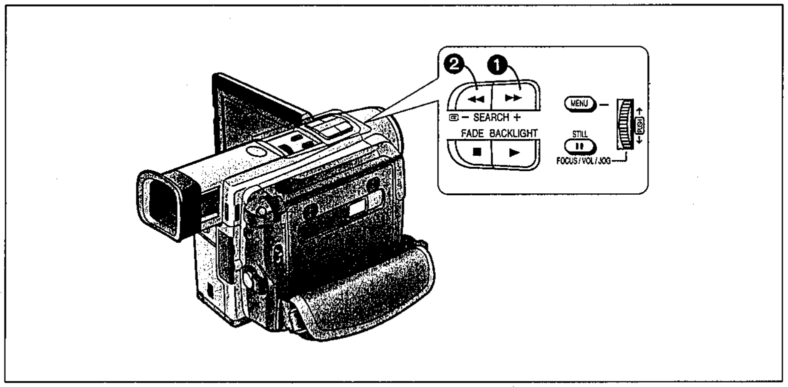
3 Press the Play Button [▶] to start playback.

4 To stop playback:
Press the Stop Button [■].

■ Adjusting the Sound Volume
Keep the [PUSH] Dial ❷ pressed until the [VOLUME] Indication ❸ appears. Then, turn the [PUSH] Dial to adjust the volume.
To make the [VOLUME] Indication disappear, press the [PUSH] Dial again until the [VOLUME] Indication disappears.

Making the Date/Time Indication Appear
This Movie Camera automatically records the date and time as part of the sub code (➔ 148).
To make the Date/Time Indication appear, set [DATE/TIME] on the Menu to the desired setting.

Using the Support Leg for Easy-to-View Playback
Extending the Support Leg ❹ from the underside of the Movie Camera makes it easier to view the playback picture on the LCD Monitor.



Searching for a Scene You Want to Play Back

Cue Playback
Keep the Cue Button [▶▶] ❶ pressed during playback.

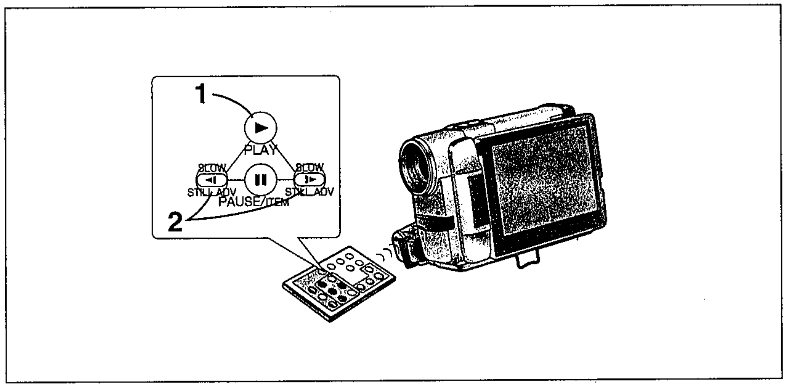
Review Playback
Keep the Review Button [◀◀] ❷ pressed during playback.

Search Lock Function
For longer Cue or Review Playback, press the Cue Button [▶▶] or the Review Button [◀◀] only briefly. As this locks the search function, you do not need to keep the button pressed for a long time.

- To resume normal playback, press the Play Button [▶].
- In Cue and Review Playback, pictures with fast-moving subjects may contain mosaic-like patterns.

Hyper Check Function

- If you press the Fast-forward Button [▶▶] during fast-forwarding of the tape or the Rewind Button [◀◀] during rewinding of the tape, Cue Playback or Review Playback continues for as long as you keep the Button pressed.
- Before and after activating the Cue Playback or Review Playback, the screen may momentarily distorted.



Playing Back in Slow Motion
(Slow Motion Playback)

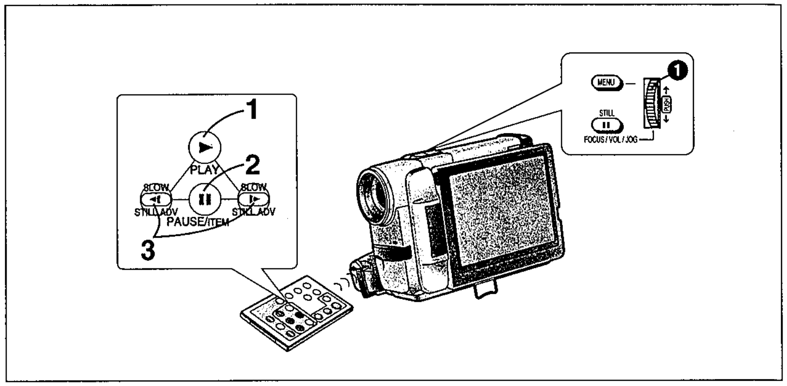
1 Press the Play Button [▶].

2 Press the Slow Motion/Still Advance Button [◂I] or [I▸] on the Remote Controller.
Pressing the [◂I] Button starts slow motion playback in reverse direction, and pressing the [I▸] Button starts slow motion playback in forward direction.

Scenes recorded in the SP Mode are played back at approximately 1/5th of the normal speed.
Scenes recorded in the LP Mode are played back at approximately 1/3rd of the normal speed.

Resuming Normal Playback
Press the Play Button [▶].
Playback continues with normal speed.

- During slow motion playback in reverse direction, the Time Code Indication may not be accurate.



Playing Back Still Pictures and Advancing Them One by One
(Still Playback/Still Advance Playback)

You can freeze the action during playback and advance the still pictures one by one.

1 Press the Play Button [▶].

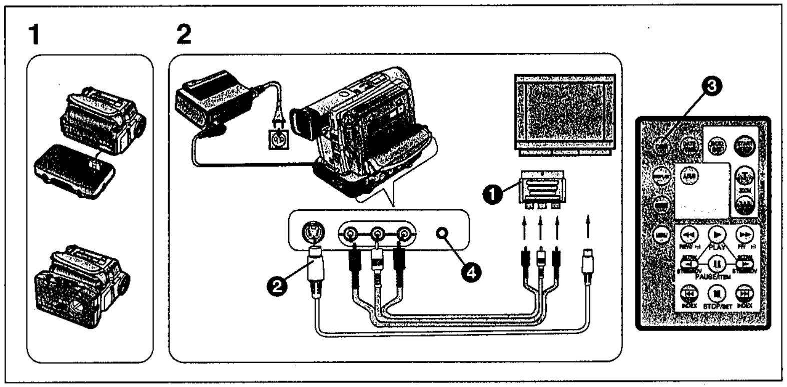
2 Press the Pause Button [❚❚].
The playback picture stops in the Still Playback Mode.

3 Press the Slow Motion/Still Advance Button [◂I] or [I▸] on the Remote Controller.
Pressing the [◂I] Button advances the still picture frame by frame in reverse direction. Pressing the [I▸] Button advances the still picture frame by frame in forward direction.

Resuming Normal Playback
Press the Play Button [▶].
Playback continues with normal speed.

- If you keep the [I▸] Button on the Remote Controller pressed for more than 1 second during Still Advance Playback, the Movie Camera switches over to the Slow Motion Playback Mode with slower speed than in the normal Slow Motion Playback Mode.
- ♦ If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear.
- ♦ During Still Advance Playback, the Time Code Indication may not be accurate.

Using the Jog Dial (Jog Playback)
By turning the Jog Dial ([PUSH] Dial) ❶ on the Movie Camera in the Still Playback Mode, you can advance the still pictures one by one in forward or reverse direction.



Playing Back on a TV
(With the Output Terminal Box [AV ONE TOUCH STATION] Attached)

Attaching the Output Terminal Box [AV ONE TOUCH STATION] to the Movie Camera makes it possible to playback recorded scenes on a TV.

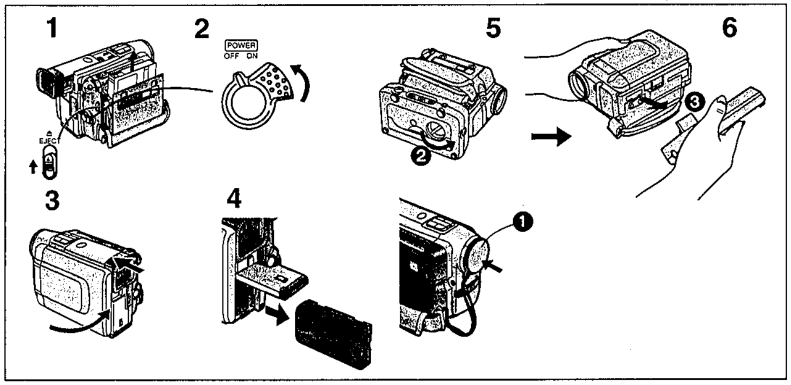
1 Attach the Output Terminal Box [AV ONE TOUCH STATION]. (→ 104)

2 Connect to the Video and Audio Input Sockets on the TV.
Use the AV Cable and 21-pin Adaptor ❶ to connect to the TV. If your TV is equipped with an S-Video Socket, also connect the S-Video Cable ❷.

- ♦ Before connecting, turn off both the Movie Camera and the TV.
- ♦ If a cassette recorded with copyright protection signal is played back, the screen becomes black. However, scenes recorded with this Movie Camera do not contain a copyright protection signal.

Making the Indications Appear on the TV Screen
Press the [OSD] Button ❸ on the Remote Controller.
The On-Screen Indications also appear on the TV screen.

Playing Back the Sound via Headphones
Using the [PHONE] Socket ❹ on the Output Terminal Box [AV ONE TOUCH STATION] lets you play back the sound on the headphones.
Even if the sound via played back from the headphones, the sound from the Movie Camera's built-in speaker can also be heard. If you want to mute the sound from the speaker, lower the volume (→ 46).


1
2
POWER
OFF ON
EJECT
3
4
5
6
❶
❷
❸

After Use

1 **Take out the cassette. (➔22)**

2 **Set the [POWER ON/OFF] Switch to [OFF].**

3 **Retract the Finder and close the LCD Monitor.**

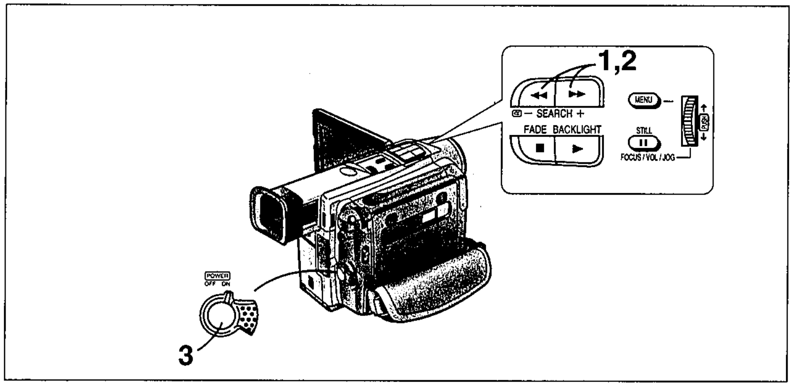
4 **Take out the Battery. (➔18)**

Attaching the Lens Cap ❶.
After use, attach the supplied Lens Cap to the Lens to protect it.

Removing the Output Terminal Box [AV ONE TOUCH STATION]
When the Output Terminal Box [AV ONE TOUCH STATION] is attached to the Movie Camera, remove it in the following way.

5 **Turn the Locking Handle in the direction of the arrow ❷.**

6 **Pull off the Output Terminal Box [AV ONE TOUCH STATION] in the direction of the arrow ❸.**


1,2
⑩ – SEARCH +
FADE BACKLIGHT
MENU
STILL
FOCUS / VOL / JOG
PUSH
POWER
OFF ON
3

Viewing Recorded Scenes During Recording Pause

(Camera Search)

You can view recorded scenes when the Movie Camera is in the Recording Pause Mode.
The Camera Search Function is convenient to search for a scene from which you want to start recording a new scene with smooth scene-to-scene transition.

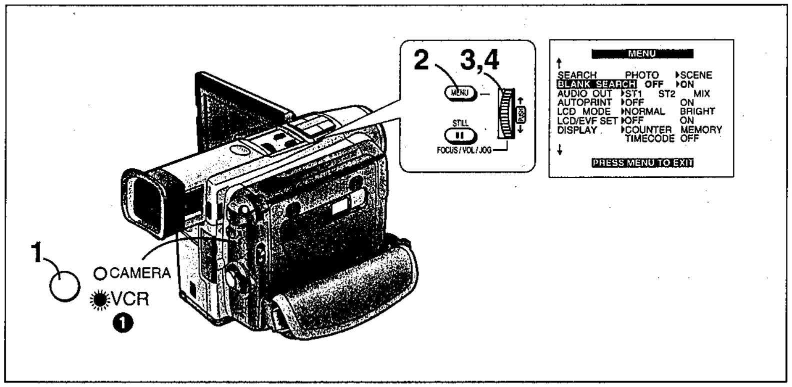
1 **Keep the Reverse Search Button [◀◀] or the Forward Search Button [▶▶] pressed for more than 1 second.**
Pressing the [◀◀] Button plays back the picture in reverse direction.
Pressing the [▶▶] Button plays back the picture in forward direction.

Starting to Record from the Desired Position

2 **Release the pressed Search Button.**
The Movie Camera is in the Recording Pause Mode.

3 **Press the Start/Stop Button to start recording.**
The Movie Camera starts recording a new scene with smooth scene-to-scene transition.

- In the Camera Search Mode, the picture may contain mosaic-like patterns. However, this is a phenomenon particular to digital video and completely normal.
- ♦ If the Recording Speed Mode (SP/LP) of the previous and the new recording are different, the playback picture may be distorted.


1
CAMERA
VCR
❶
2
3,4
MENU
STILL
FOCUS / VOL / JOG
PUSH
MENU
SEARCH PHOTO ▸SCENE
BLANK SEARCH OFF ▸ON
AUDIO OUT ▸ST1 ST2 MIX
AUTOPRINT ▸OFF ON
LCD MODE ▸NORMAL BRIGHT
LCD/EVF SET ▸OFF ON
DISPLAY ▸COUNTER MEMORY
TIMECODE OFF
PRESS MENU TO EXIT

Searching for the End of the Recorded Part on a Cassette

(Blank Search)

With the Blank Search Function you can quickly locate the end of the recorded part on a cassette (or a blank part between recordings).

1 **Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights. ❶**

2 **Press the [MENU] Button.**
The Menu appears.

3 **Turn the [PUSH] Dial to select [BLANK SEARCH].**

4 **Press the [PUSH] Dial to select [ON].**
Approximately 1 second before the end of the last recorded scene, the Movie Camera switches over to the Still Playback Mode.

- If there is no blank part on a cassette, the Movie Camera stops at the end of the tape.
- When the Blank Search has finished, you can press the [VCR/CAMERA] Button so that the [CAMERA] Lamp lights and start recording. The new scene is recorded with a smooth transition from the last to the new scene.

Searching for the Beginning of Recorded Scenes Marked the Index Signal

(Index Search)

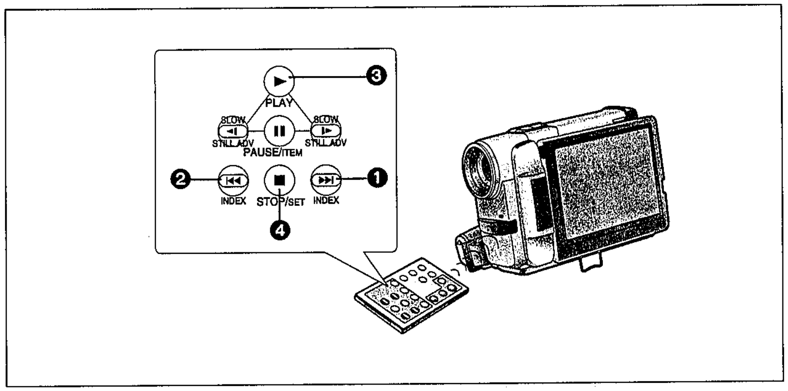
Index Search
To allow easy searching for desired scenes, this Movie Camera automatically records index signals during recording as follows:

❶ Photoshot Index Signal
To search for still pictures recorded in the Photoshot Mode (→ 40) and to use for automatic printing (→ 114).
A photoshot index signal is automatically recorded every time you record a still picture in the Photoshot Mode.

❷ Scene Index Signal
To search for the beginning of recorded scenes.
A scene index signal is automatically recorded in the following cases:

- When you start recording after inserting a cassette.
- Depending on the setting of [SCENEINDEX] on the [MENU (OTHERS)] Menu (→ 120-124):
  [2HOUR]: An index signal is recorded when recording is restarted after a lapse of more than 2 hours.
  [DAY]: An index signal is recorded when recording is restarted after the date has changed since the last recording.

(While an index signal is being recorded, the [INDEX] Indication flashes for a few seconds.)



Searching for the beginning of Still Pictures Recorded in the Photoshot Mode
(Photoshot Index Search)

- Press the [VCR/CAMERA] Button on the Movie Camera so that the [VCR] Lamps lights.
- Set [SEARCH] on the Menu to [PHOTO]. (→ 120, 126) (The initial setting is [PHOTO].)

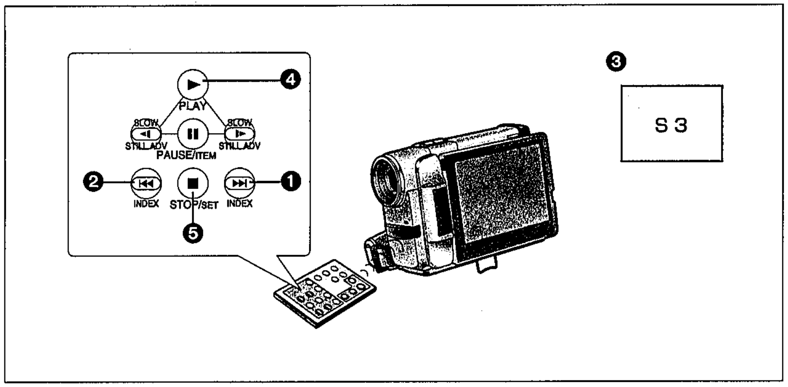
Photoshot Index Search in Forward Direction
Press the Index Button [►►I] ❶ on the Remote Controller.

Photoshot Index Search in Reverse Direction
Press the Index Button [I◄◄] ❷ on the Remote Controller.

- At every press of the corresponding button, the tape is fast-forwarded or rewound to the next still picture recorded in the Photoshot Mode.
  After reaching the next still picture, the still picture is played back continually together with the sound (only for apporx. 4 seconds). (If you leave the Movie Camera in the Still Playback Mode for more than 6 minutes, it switches over to the Stop Mode to protect the video heads against excessive wear).

♦ The Photoshot Index Search may not work correctly for still pictures recorded near the beginning of the tape.

- If you keep the [I◄◄] or [►►I] Button pressed for more than 2 seconds, the Intro Search Function is activated and it plays back all still pictures recorded in the Photoshot Mode on the cassette one after another for a few seconds each.
  (To cancel the Intro Search Function, press the Play Button [►] ❸ or the Stop Button [■] ❹.)



Searching for the Beginning of Recorded Scenes (Scene Index Search)

- Press the [VCR/CAMERA] Button on the Movie Camera so that the [VCR] Lsmps lights.
- Set [SEARCH] on the Menu to [SCENE].(→120, 126)

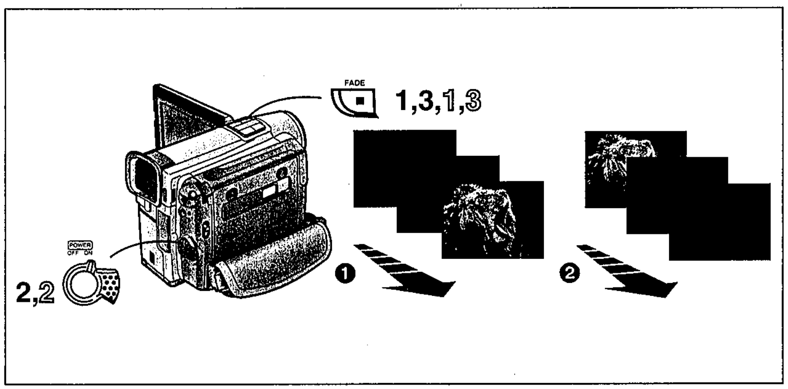
Scene Index Search in Forward Direction
Press the Index Button [►►I] ❶ on the Remote Controller.

Scene Index Search in Reverse Direction
Press the Index Button [I◄◄] ❷ on the Remote Controller.

- When you briefly press the corresponding button once, the [S1] Indication appears and the search for the next scene marked with an index signal starts. After the Scene Index Search has started, every time you press the button, the indication changes successively from [S2] to [S9], and the beginning of the scene corresponding to the number is located. ❸
  After reaching the desired scene, playback starts automatically.(At a time, Scene Index Search in forward or reverse direction is possible up to the ninth scene from the present tape position.)

♦ If the distance between two scene index signals is less than 1 minute, the Scene Index Search may not work correctly.
♦ The Scene Index Search may not work correctly for scenes recorded near the beginning of the tape.

- If you keep the [I◄◄] or [►►I] Button pressed for more than 2 seconds, the Intro Search Function is activated and it plays back the beginning of all scenes marked with an index signal on the cassette one after another for a few seconds each.
  (To cancel the Intro Search Function, press the Play Button [►] ❹ or the Stop Button [■] ❺.)



Fading In/Out

Fading In ❶

Fading-in lets you make the picture and sound appear gradually from a black screen at the beginning of a scene.

1 **With the Movie Camera in the Recording Pause Mode, keep the Fade Button [■] pressed.**
The picture gradually disappears.

2 **When the picture has completely disappeared, press the Start/Stop Button to start recording.**

3 **Approximately 3 seconds after the recording has started, release the Fade Button [■].**
The picture gradually appears again.

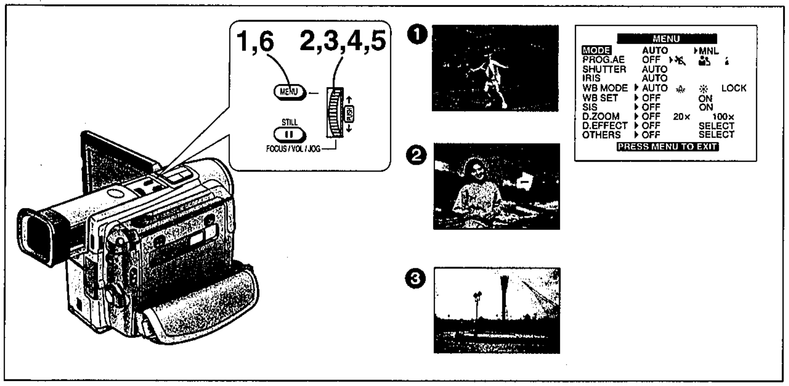
Fading Out ❷

Fading-out lets you make the picture and sound disappear gradually into a black screen at the end of a scene.

1 **During recording, keep the Fade Button [■] pressed.**
The picture gradually disappears.

2 **After the picture has completely disappeared, press the Start/Stop Button to stop recording.**
The Movie Camera is in the Recording Pause Mode.

3 **Release the Fade Button [■].**



Recording In Various Situations

(Programme AE)

This function lets you select Automatic Exposure settings optimized for special recording situation.

1 **Press the [MENU] Button.**
The Menu appears.

2 **Turn the [PUSH] Dial to select [MODE].**

3 **Press the [PUSH] Dial to select [MNL].**

4 **Turn the [PUSH] Dial to select [PROG.AE].**

5 **Press the [PUSH] Dial to select the desired mode ([ ], [ ] or [ ]).**
This makes it impossible to set [SHUTTER] and [IRIS] on the Menu to [SELECT].

6 **Press the [MENU] Button to exit the Menu.**
The indication of the selected mode appears.

[ ] Sports Mode ❶
To record scenes with fast-moving subjects such as sports scenes.

[ ] Portrait Mode ❷
To make subjects stand out sharply from the background.

[ ] Low Light Mode ❸
To record dark scenes more brightly.

Cancelling the Programme AE Function
Set [PROG.AE] on the Menu to [OFF].

Sports Mode

- When playing back scenes recorded in the Sports Mode, you can enjoy slow motion and still playback of very sharp images with fine details.
- Avoid recording under fluorescent, mercury-vapour or natrium lamps as the colour and the brightness of the playback picture might fluctuate.
- When recording subjects lit by strong lights or with much light reflection, the playback picture may contain vertical streaks of light.
- When the scene is not sufficiently lit, the [ ] Indication flashes.
- When using this mode for recording indoors, the playback picture may flicker.

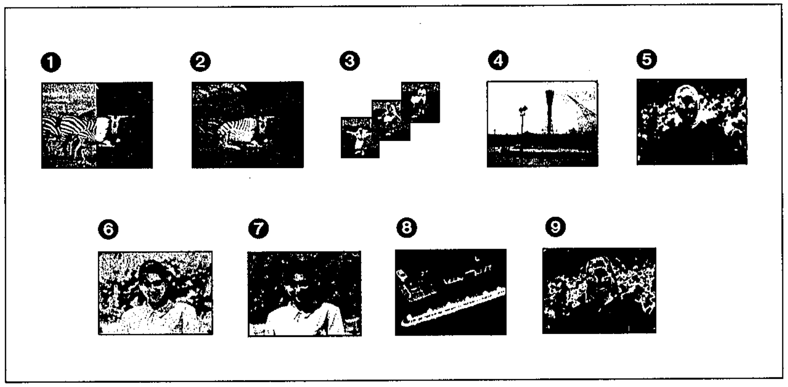
Portrait Mode

- When using this mode for recording indoors, the playback picture may flicker.

Low Light Mode

- It may not be possible to sufficiently brighten up extremely dark scenes.

- If you select [GAINUP] on the [MENU (D.EFFECT)] Menu (→ 76) while you are using the Sports Mode or Portrait Mode this mode is cancelled.



Recording with Special Effects
(Digital Effects)

There are 9 different modes available for adding special digital picture effects.

❶ **Wipe Mode [WIPE]**
It gradually replaces a picture of the last recorded scene with the picture of the new scene, like drawing the curtain. For details, (→ 78)

❷ **Mix Mode [MIX]**
It gradually fades out the picture of the last recorded scene while fading in the picture of the new scene. For details, (→ 80)

❸ **Strobe Mode [STROBE]**
It records the pictures with a stroboscope-like effect.

❹ **Gain-up Mode [GAINUP]**
It electronically brightens up the picture.
- In this mode, adjust the focus manually.
- ♦ Some after-image distortion may occur during recording with the Gain-up Function.

❺ **Negative/Positive Mode [NEGA]**
The recorded pictures have reversed colours similar to photographic negatives.

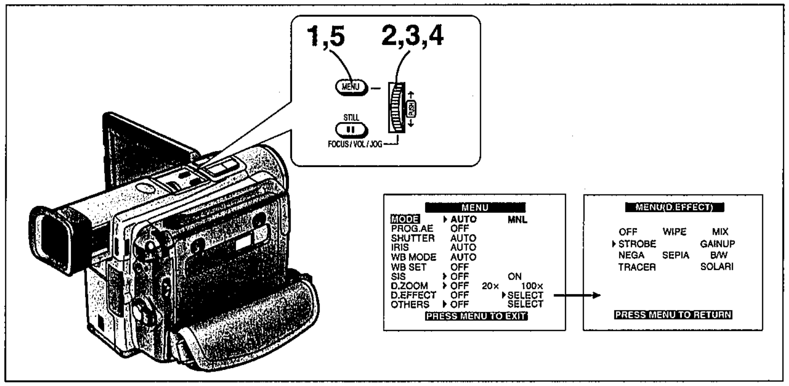
❻ **Sepia Mode [SEPIA]**
Scenes are recorded with a brown tint similar to the colour of old photographs.

❼ **Monotone Mode [B/W]**
The picture is recorded in black and white.

❽ **Trailing Effect Mode [TRACER]**
The picture is recorded with a trailing effect.

❾ **Solarisation Mode [SOLARI]**
The picture is recorded with reversed colours.

♦ The Digital Effects cannot be used when the Super Image Stabilizer Function or the Digital Zoom Function is activated.
When you want to use a digital effect, be sure to set both [D.ZOOM] and [SIS] on the Menu to [OFF].


1,5
2,3,4
MENU
STILL
FOCUS/VOL/JOG
PUSH
MENU
MODE ▸AUTO MNL
PROG.AE OFF
SHUTTER AUTO
IRIS AUTO
WB MODE AUTO
WB SET OFF
SIS ▸OFF ON
D.ZOOM ▸OFF 20× 100×
D.EFFECT OFF ▸SELECT
OTHERS ▸OFF SELECT
PRESS MENU TO EXIT
MENU(D.EFFECT)
OFF WIPE MIX
▸STROBE GAINUP
NEGA SEPIA B/W
TRACER SOLARI
PRESS MENU TO RETURN

Recording with Special Effects
(Digital Effects) (Continued)

Selecting the Desired Digital Effect

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select [D.EFFECT].
♦ **Set [D.ZOOM] and [SIS] on the Menu to [OFF], otherwise you cannot select a Digital Effect.**

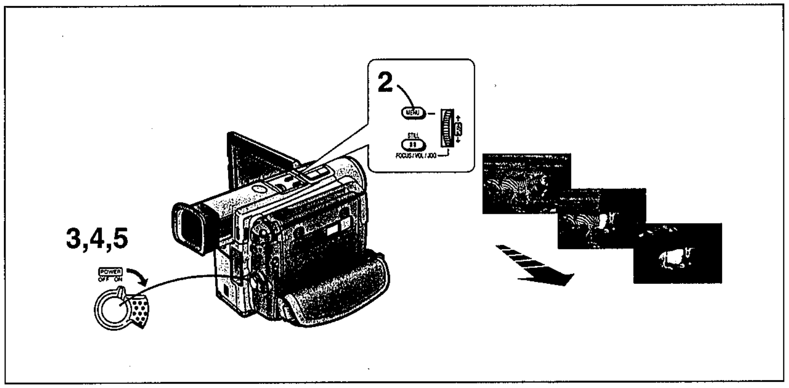
3 Press the [PUSH] Dial to select [SELECT].
The [MENU (D.EFFECT)] Menu appears.

4 Press the [PUSH] Dial to select the desired digital effect.

5 Press the [MENU] Button twice to exit the Menu.
- The picture has the selected digital effect now. However, the effect of the Wipe Function and the Mix Function only become visible when actually recording in the respective mode. (→ 78, 80)

♦ If you select [GAINUP] on the [MENU (D.EFFECT)] Menu afrer adjusting the shutter speed manually or if you select either [ ] or [ ] for [PROG.AE], the selected shutter speed or the Programme AE Mode is cancelled.

Cancelling the Digital Effect
Set [D.EFFECT] on the Menu to [OFF].


2
MENU
STILL
FOCUS/VOL/JOG
3,4,5
POWER
OFF ON

Recording with Special Effects
(Digital Effects) (Continued)

■ Wipe Mode
It gradually replaces a still picture of the last recorded scene with the moving picture of the new scene, like drawing the curtain.

After performing steps 1-3 page 76:

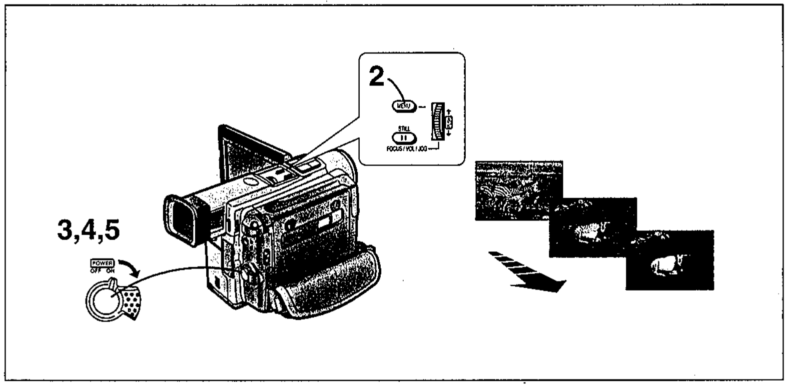
1 Select [WIPE] on the [MENU (D.EFFECT)] Menu. (→ 76)

2 Press the [MENU] Button twice to exit the Menu.

3 Press the Start/Stop Button to start recording.
The normal recording starts.

4 Press the Start/Stop Button to pause recording.
The last picture is stored in memory.

5 Press the Start/Stop Button to start recording again.
The last picture of the previous scene is gradually replaced by the new scene.


3,4,5
POWER
OFF ON
2
MENU
STILL
FOCUS / VOL / JOG

Recording with Special Effects

(Digital Effects) (Continued)

■ Mix Mode

It gradually fades out a still picture of the last recorded scene while fading in the moving picture of the new scene.

After performing steps 1-3 page 76):

1 **Select [MIX] on the [MENU (D.EFFECT)] Menu. (→ 76)**

2 **Press the [MENU] Button twice to exit the Menu.**

3 **Press the Start/Stop Button to start recording.**
The normal recording starts.

4 **Press the Start/Stop Button to pause recording.**
The last picture is stored in memory.

5 **Press the Start/Stop Button to start recording again.**
The last picture gradually fades out while the new scene fades in.

Recording with Natural Colours

(White Balance)

This Movie Camera automatically adjusts the white balance to ensure that the pictures are recorded with natural colours. For certain types of subjects and lighting conditions, however, this Auto White Balance Adjustment Mode may not be able to ensure natural colours (→ 154, 156). In these cases, adjust the white balance manually.

1 **Press the [MENU] Button.**
The Menu appears.

2 **Turn the [PUSH] Dial to select [MODE].**

3 **Press the [PUSH] Dial to select [MNL].**

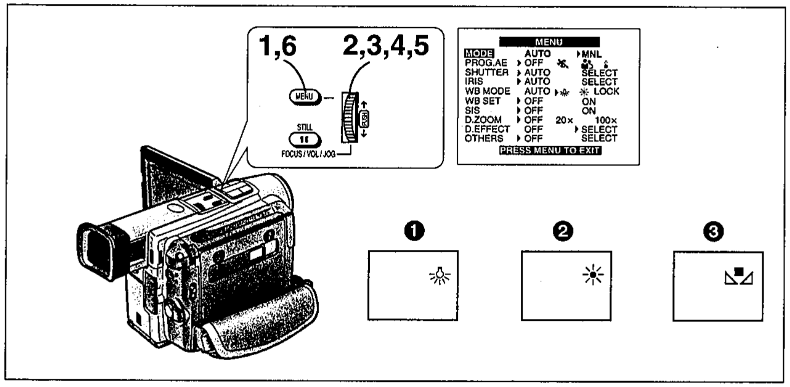
4 **Turn the [PUSH] Dial to select [WB MODE].**

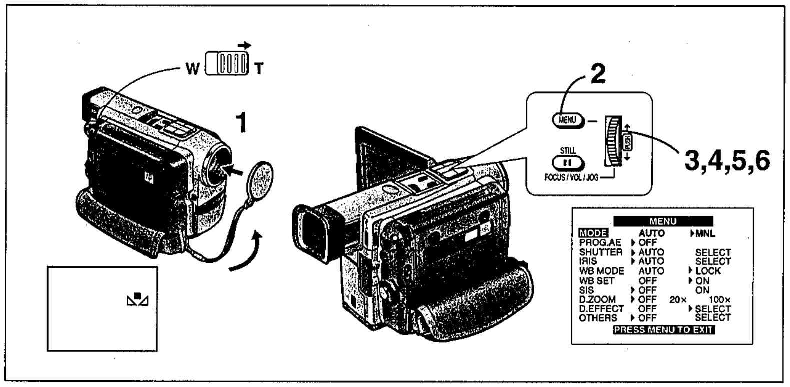
5 **Press the [PUSH] Dial to select the desired mode.**
The following White Balance Mode settings are possible:
❶ Indoor (incandescent Lamp) Mode (☼)
❷ Outdoor Mode (✳)
❸ Lock Mode (▣)
If you set [WB MODE] on the Menu to [LOCK], it is necessary to set [WB SET] on the Menu to [ON] and adjust the white balance manually. (→ 84)

6 **Press the [MENU] Button to exit the Menu.**

- If you select [GAINUP], [SEPIA] or [B/W] on the [MENU(D.EFFECT)] Menu, you cannot select or change the White Balance Mode.

Returning to the Auto White Balance Mode
Set [WB MODE] on the Menu to [AUTO].


1,6
2,3,4,5
MENU
STILL
FOCUS / VOL / JOG
MENU
MODE AUTO MNL
PROG.AE OFF
SHUTTER AUTO SELECT
IRIS AUTO SELECT
WB MODE AUTO LOCK
WB SET OFF ON
SIS OFF ON
D.ZOOM OFF 20× 100×
D.EFFECT OFF SELECT
OTHERS OFF SELECT
PRESS MENU TO EXIT
❶
❷
❸


W
T
1
2
MENU
STILL
FOCUS / VOL / JOG
3,4,5,6
MENU
MODE AUTO MNL
PROG.AE OFF
SHUTTER AUTO SELECT
IRIS AUTO SELECT
WB MODE AUTO LOCK
WB SET OFF ON
SIS OFF ON
D.ZOOM OFF 20× 100×
D.EFFECT OFF SELECT
OTHERS OFF SELECT
PRESS MENU TO EXIT

Adjusting the White Balance Manually

Use the Manual White Balance Adjustment Mode for all types of lighting outside the range ❶ (→ 156), as the Auto White Balance Adjustment Mode can only ensure natural colours for the types of lighting within that range. For optimum results under almost any types of lighting, we recommend that you adjust the white balance manually for each new scene, as professionals do.

1 **Attach the Lens Cap and zoom in until the entire screen becomes white.**

2 **Press the [MENU] Button.**
The Menu appears.

3 **Turn the [PUSH] Dial to select [MODE].**

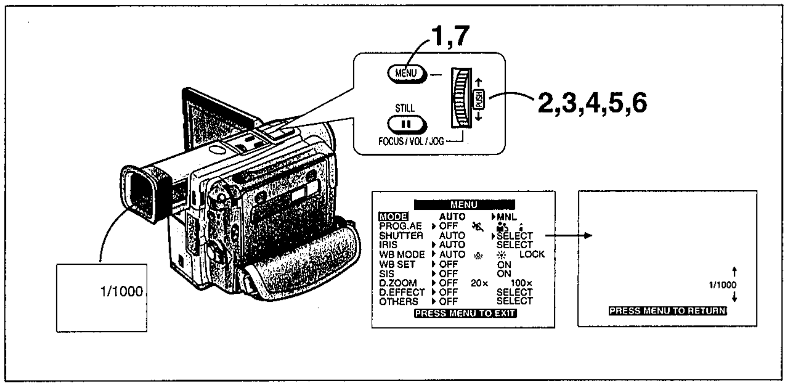
4 **Press the [PUSH] Dial to select [MNL].**

5 **Turn the [PUSH] Dial to select [WB SET].**

6 **Aim the Movie Camera to the subject and press the [PUSH] Dial to select [ON].**

- When the [▣] Indication stops flashing and remains lit, the Manual White Balance Adjustment is finished. If you want to use this setting again later on, for example after having used Automatic White Balance Adjustment, you can recall it by setting [WB MODE to [LOCK] on the Menu. (In this case, the [▣] Indication flashing.)
- When the [▣] Indication remains flashing under weak illumination, the Manual White Balance Adjustment can not setting.

Returning to the Auto White Balance Adjustment Mode
Set [WB MODE] on the Menu to [AUTO].


1,7
MENU
STILL
FOCUS / VOL / JOG
PUSH
2,3,4,5,6
1/1000
MENU
MODE AUTO ▸MNL
PROG.AE ▸OFF
SHUTTER AUTO ▸SELECT
IRIS ▸AUTO SELECT
WB MODE ▸AUTO LOCK
WB SET ▸OFF ON
SIS ▸OFF ON
D.ZOOM ▸OFF 20× 100×
D.EFFECT ▸OFF SELECT
OTHERS ▸OFF SELECT
PRESS MENU TO EXIT
1/1000
PRESS MENU TO RETURN

Adjusting the Shutter Speed Manually

To achieve special creative effects or to cope with special lighting situations or fast-action scenes, you can adjust the shutter manually.

1 **Press the [MENU] Button.**
The Menu appears.

2 **Turn the [PUSH] Dial to select [MODE].**

3 **Press the [PUSH] Dial to select [MNL].**

4 **Turn the [PUSH] Dial to select [SHUTTER].**
If you set [PROG.AE] to any setting other than [OFF], you cannot select [SHUTTER].

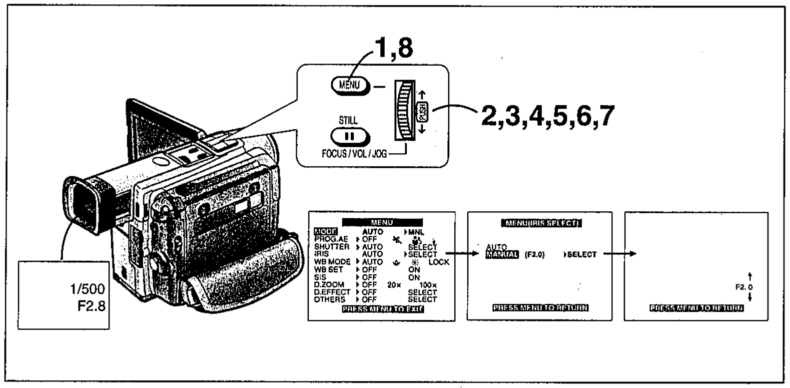
5 **Press the [PUSH] Dial to select [SELECT].**

6 **Turn the [PUSH] Dial to ajust the shutter speed.**

7 **Press the [MENU] Button twice to exit the Menu.**
The indication of the selected shutter speed appears.

Range of Shutter Speed Adjustment
1/50 –1/8000 s
The standard shutter speed is 1/50 s.
The nearer to [1/8000] a setting you select, the faster the shutter speed becomes.

Returning to the Normal Shutter Speed
Set [MODE] on the Menu to [AUTO].


1,8
MENU
STILL
FOCUS / VOL / JOG
PUSH
2,3,4,5,6,7
1/500
F2.8
MENU
MODE AUTO ▸MNL
PROG.AE ▸OFF
SHUTTER ▸AUTO SELECT
IRIS AUTO ▸SELECT
WB MODE ▸AUTO LOCK
WB SET ▸OFF ON
SIS ▸OFF ON
D.ZOOM ▸OFF 20× 100×
D.EFFECT ▸OFF SELECT
OTHERS ▸OFF SELECT
PRESS MENU TO EXIT
MENU(IRIS SELECT)
AUTO
MANUAL (F2.0) ▸SELECT
PRESS MENU TO RETURN
F2.0
PRESS MENU TO RETURN

Adjusting the Iris (F Number) Manually

To achieve special creative effects or to cope with special lighting situations or fast-action scenes, you can adjust the iris (F number) manually.

1 **Press the [MENU] Button.**
The Menu appears.

2 **Turn the [PUSH] Dial to select [MODE].**

3 **Press the [PUSH] Dial to select [MNL].**

4 **Turn the [PUSH] Dial to select [IRIS].**

5 **Press the [PUSH] Dial to select [SELECT].**
The Manual Iris Adjustment Menu [MANUAL(IRIS SELECT)] appears.

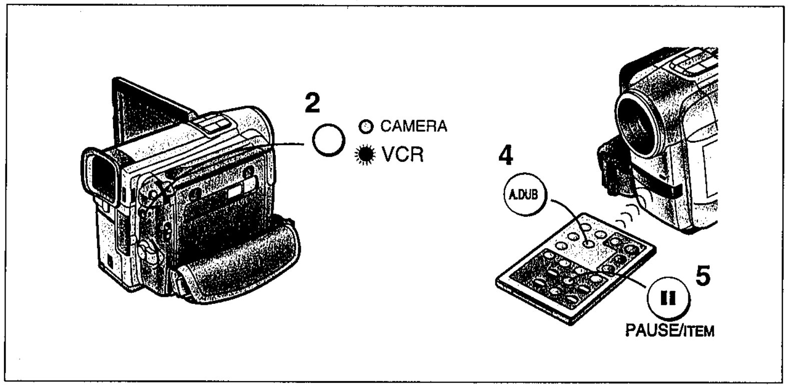
6 **Turn the [PUSH] Dial to select [MANUAL] and then press the [PUSH] Dial.**

7 **Turn the [PUSH] Dial to adjust the iris value (F number).**

8 **Press the [MENU] Button twice to exit the Menu.**
The indication of the selected iris value (F number) appears.

Range of iris adjustment
CLOSE (Closed) → F16.0 ... F1.7 → OP (Opened)
+0dB...+18dB
The nearer to [CLOSE] a value you select, the darker the picture becomes.
The nearer to [OP] a value you select, the brighter the picture becomes.
The figures with +dB show the Gain-up value. If you increase the value too much, the picture deteriorates.

Returning to the Normal Iris Value (F Number)
Set [MODE] on the Menu to [AUTO].


2
○ CAMERA
● VCR
4
A.DUB
5
PAUSE/ITEM

Adding New Sound on a Recorded Cassette

(Audio Dubbing)

To perform audio dubbing, the Remote Controller is necessary.
You can add music or narration to a recorded cassette.

- **If [AUDIO REC] on the [MENU (OTHERS)] Menu has been set to [16bit], performing audio dubbing will completely erase the previously recorded sound.**
  Therefore, if you intend to perform audio dubbing but also want to keep the original sound, be sure to set [AUDIO REC] on the [MENU (OTHERS)] Menu to [12bit] before making the original recording.
- It is not possible to perform audio dubbing onto recordings made in the LP Mode. (→ 24)

1 **Insert the recorded cassette and set the [POWER ON/OFF] Switch to [ON].**

2 **Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.**

3 **At the point where you want to insert the sound, switch the Movie Camera over to the Still Playback Mode.**

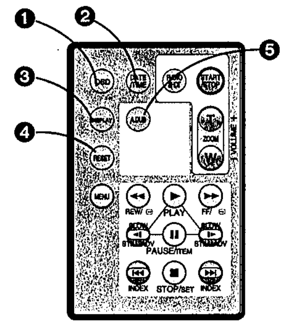
4 **Press the [A.DUB] Button on the Remote Controller.**

5 **Press the Pause Button [❙❙] on the Remote Controller to start audio dubbing.**

Stopping Audio Dubbing
Press the Pause Button [❙❙] on the Remote Controller.
The Movie Camera is again in the Still Playback Mode.

Playing Back the Sound Recorded with Audio Dubbing

- If you set [AUDIO REC] on the [MENU (OTHERS)] Menu to [12bit] for the original recording, the sound added with audio dubbing and the original sound are played back as follows depending on the setting of [AUDIO OUT] on the VCR Mode Menu (➔120-126):
  - ST1: The original sound alone is played back.
  - ST2: The dubbed sound alone is played back.
  - MIX: The original sound and the sound added with audio dubbing are played back together.
- **Do not perform audio dubbing onto unrecorded parts of the tape. This could cause the playback picture and sound to be distorted.**
- If you reset the Tape Counter to zero and turn on the Memory Stop Function (➔ 158) at the point where you want the audio dubbing to end, the audio dubbing automatically stops when the tape reaches that point.



Remote Controller

Using the wireless Remote Controller supplied with the Movie Camera allows operating most of the Movie Camera's major functions from a distance.

Buttons on the Remote Controller

❶ Indication Output Button [OSD] (➔ 54)

To display the function and operation indications on a connected TV.

❷ Date and Time Button [DATE/TIME] (➔ 46)

To make the date/time indication appear or disappear in the picture during recording and playback.

❸ Indication Shift Button [DISPLAY] (➔ 166)

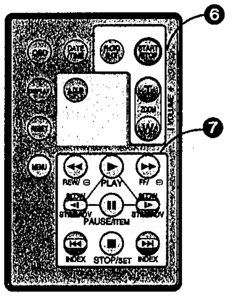
To change the indications.

❹ Reset Button [RESET] (➔ 158)

To reset the Tape Counter to zero.

❺ Audio Dubbing Button [A.DUB] (➔ 90)

To perform audio dubbing.



❻ Controls for Recording and Sound Volume

Photoshot Button [PHOTO SHOT] (➔ 40)
To record still pictures.

Recording Start/Stop Button [START/STOP] (➔ 30)
To start and pause recording.

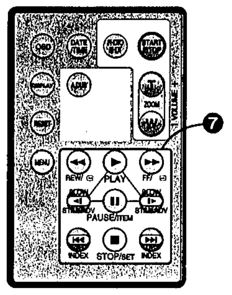
Zoom/Sound Volume Buttons [ZOOM/VOLUME]
To zoom in and out. (➔ 38)
To adjust the volume of the playback sound. (➔ 46)

❼ Controls for Playback/Menu Setting

Rewind/Review Button [◀◀]
To start review playback (➔ 48) if pressed during normal playback; and to rewind the tape if pressed in the Stop Mode.
Also to activate the Camera Search Function (➔ 58) in reverse direction if kept pressed in the Recording Pause Mode. Pressing it briefly activates the Recording Check Function (➔ 32).

Fast-forward/Cue Button [▶▶]
To start cue playback (➔ 48) if pressed during normal playback; and to fast-forward the tape if pressed in the Stop Mode.
Also to activate the Camera Search Function (➔ 58) in forward direction if kept pressed in the Recording Pause Mode.

Play Button [▶] (➔ 46)
To start playback.



⑦ Slow Motion/Still Advance Button [◀I, I▶] (→ 50, 52)
To perform Slow Motion Playback if pressed in the Normal Playback Mode; and to perform Still Advance Playback if pressed in the Still Playback Mode.
(◀I: in reverse direction, I▶: in forward direction)

Index Search Button [I◀◀, ▶▶I] (→ 64, 66)
To search for recorded scenes marked with an index signal and for still images recorded in the Photoshot Mode.
(I◀◀ : in reverse direction, ▶▶I : in forward direction)

Stop Button [■] (→ 46)
To stop the tape.

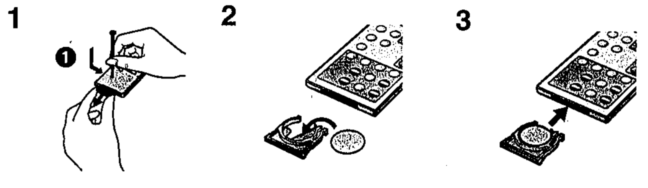
Pause Button [❚❚] (→ 52)
To pause playback. The playback picture stands still.

Using the Menu Button
Pressing the Menu Button displays the Menu.
In this case, the functions of the following buttons are changed:

Pause Button → Item Button
To select items on the Menu.

Stop Button → Setting Button
To set the mode for the selected item.

- ♦ The iris and the shutter speed cannot be adjusted with the Remote Controller. If you want to adjust them manually, use the [PUSH] Dial on the Movie Camera. (→ 86, 88)



Remote Controller
(Continued)

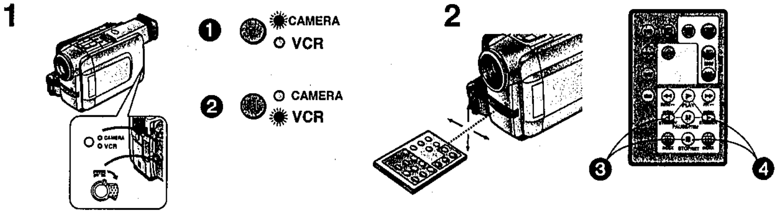
■ Inserting the Button-type Battery
Insert the supplied button-type battery before using the Remote Controller.

1 Pull out the Battery Holder while sliding the Stopper with a pointed object in the direction of the arrow ①.

2 Insert the button-type battery with the stamped (+) mark facing downward.

3 Insert the Battery Holder into the Remote Controller.
- When the button-type battery is exhausted, replace with a new CR2025 battery.
  (The life of the battery is about 1 year. However, it depends on the frequency of use.)
- ♦ **Keep the button-type battery out of the reach of children.**
- ♦ Make sure you insert the battery with its poles correctly aligned.

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.



■Using the Remote Controller

1 Set the [POWER ON/OFF] Switch on the Movie Camera to [ON].
- When the [CAMERA] Lamp lights, you can use the recording functions. ①
- If you want to use the playback functions, press the [VCR/CAMERA] Button so that the [VCR] Lamp lights. ②

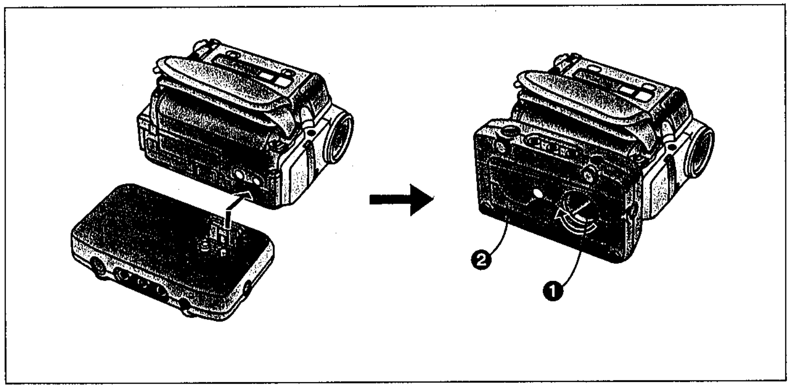
2 Aim the Remote Controller at the Remote Control Sensor on the Movie Camera and press the appropriate button.
Distance to the Movie Camera: Less than 5 metres.
Angle: Approximately 15° up, down, left and right from centre axis.

- ♦ The operative range described above is valid for using the Remote Controller indoors.
  When using it outdoors or under strong lights, it may not work correctly even within the above range.
- Within a distance of about 1 metre, it is also possible to use the Remote Controller from the side (LCD Monitor side).

Selecting the Remote Controller Mode
When using two Movie Cameras at the same time, selecting different Remote Controller Modes makes it possible to operate them separately.
- ♦ If the Remote Controller Mode set on the Movie Camera and on its Remote Controller are not matched, the [REMOTE] indication appears.
- ♦ Replacing the button-type battery in the Remote Controller automatically resets it to the [VCR1] Mode.
- Set [REMOTE] on the [MENU(OTHERS)] Menu to the desired Remote Controller Mode. (→120-124)

③ **Press the [◀I] Button and the [■] Button simultaneously.**
This selects the [VCR2] Mode.

④ **Press the [I▶] Button and the [■] Button simultaneously.**
This selects the [VCR1] Mode.



Copying onto an S-VHS (VHS) Cassette

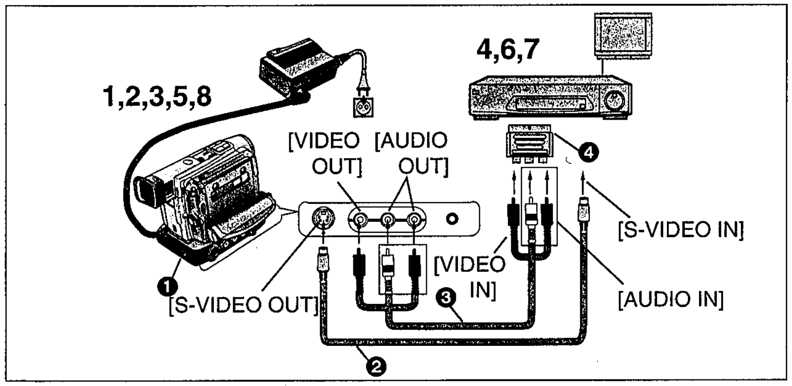
(Dubbing)

If you attach the Output Terminal Box [AV ONE TOUCH STATION], you can copy cassettes recorded with this Movie Camera onto S-VHS or VHS cassettes.

Attaching the Output Terminal Box [AV ONE TOUCH STATION]

1 Attach the Output Terminal Box [AV ONE TOUCH STATION] to the underside of the Movie Camera with the Screw ❶.

- Before copying, press the [OSD] Button on the Remote Controller (→ 54) so that no indications appear. Otherwise, the Counter Indication and function indications are also recorded onto the cassette.
- Extending the Support Leg ❷ from the underside of the Output Teminal Box makes it easier to view the playback picture on the LCD Monitor.



After connecting all equipment as shown above perform the following operations:

1 Movie Camera:
Set the [POWER ON/OFF] Switch to [ON].

2 Movie Camera:
Insert the recorded cassette.

3 Movie Camera:
Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.

4 VCR:
Insert an unrecorded cassette with intact erasure prevention tab.

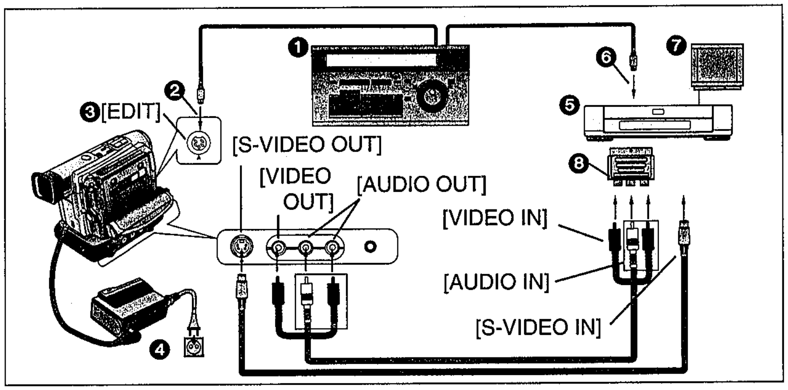
5 Movie Camera:
Press the Play Button [▶] to start playback.

6 VCR:
Start recording.

7 VCR:
Press the Pause or Stop Button to stop recording.

8 Movie Camera:
Press the Stop Button [■] to stop playback.

❶ Output Terminal Box [AV ONE TOUCH STATION]
❷ S-Video Cable
❸ AV Cable
❹ 21-Pin Adaptor



Copying with the Help of an Editing Controller

If you connect the Movie Camera to an Editing Controller equipped with 5-pin Edit Socket, this Movie Camera's playback functions can be controlled from the Editing Controller.
(The Output Terminal Box [AV ONE TOUCH STATION] is necessary.)

When Connecting the Editing Controller VW-EC500E ❶ (optional)

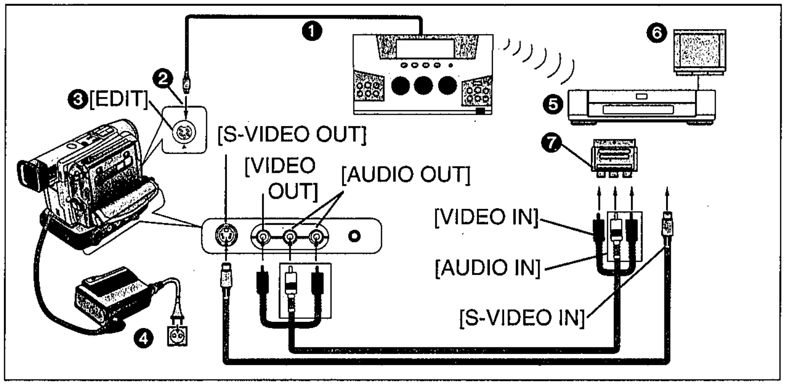
- A VCR equipped with 5-pin Edit Socket is necessary.
- When you connect the VW-EC500E to the Movie Camera, an adjustment on the VW-EC500E is necessary. For the operation of the Editing Controller, refer to its operating instructions.

When Editing with Time Code

Press the [DISPLAY] Button on the Remote Controller to make the Time Code appear.

- When the Time Code is displayed , the Time Code Signal is output from the Edit Socket.
- When the Counter Indication is displayed, the Linear Tape Counter Signal is output.

❷ To Edit Socket
❸ Edit Socket
❹ Connect the AC Adaptor.
❺ VCR (optional)
❻ To Edit Socket
❼ TV (optional)
❽ 21-Pin Adaptor



When Connecting the Editing Controller VW-EC1E (optional)

- When you use the Editing Controller VW-EC1E ❶, it is not necessary to connect it to the Edit Socket on the VCR, as the VCR's operation is performed via remote controller. Therefore, editing is also possible onto VCRs not equipped with an Edit Socket.
- For the operation of the Edit Controller, refer to its operating instructions.

When Connecting the Editing Controller VW-EC310E to this Movie Camera, such events as described below may occur:

  - The editing precision may be bad.
  - Editing cannot be performed correctly.

Therefore, we recommend that you use the VW-EC500E or the VW-EC1E as Editing Controller with this Movie Camera.

❷ To Edit Socket
❸ Edit Socket
❹ Connect the AC Adaptor.
❺ VCR (optional)
❻ TV (optional)
❼ 21-pin Adaptor

Using the Movie Camera with a Video Printer

If you connect the Movie Camera to a Video Printer, you can print still picture from scenes recorded with the Movie Camera.

Movie Camera:

1 Set the [POWER ON/OFF] Switch to [ON] to turn the Movie Camera on.

2 Insert a recorded cassette and press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.

5 Press the Play Button [▶].

Video Printer:

3 Turn the Video Printer on.

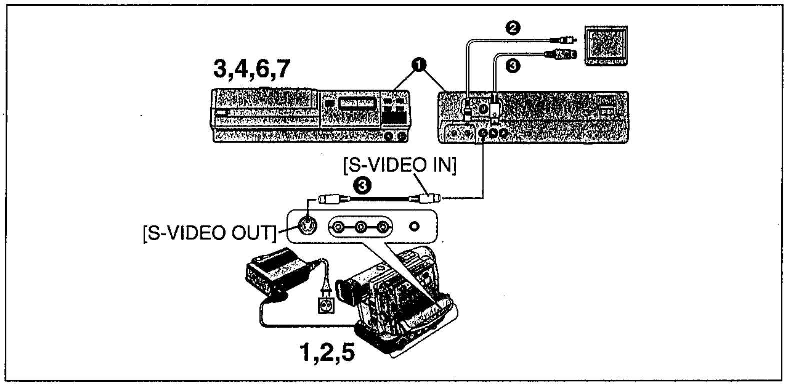
4 If the Video Printer is equipped with Super Image Stabilizer Function and/or Moving/Still Picture Mode, adjust them according to the picture being input.

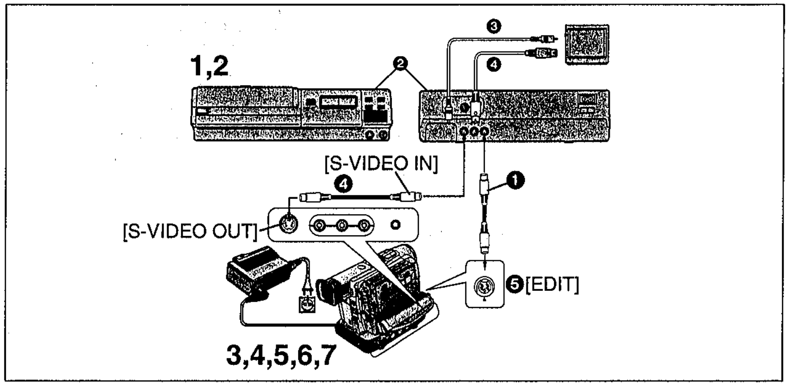
6 Store the image in memory.

7 Start printing.

- Read the operating instructions of the Video Printer ❶.

❷ Video Cable (supplied with the Video Printer)
❸ S-Video Cables (supplied with the Movie Camera and Video Printer)





Using the Automatic Printing Function (AUTOPRINT)

If you connect the Movie Camera to a Video Printer ❷ equipped with 5-pin Edit Socket, you can use the Auto Print Function to automatically print still pictures recorded in the Photoshot Function.

Video Printer:

1 Turn the Video Printer on.

2 Make the necessary setting on the Video Printer according to the input signal.

Movie Camera:

3 Set the [POWER ON/OFF] Switch to [ON] to turn the Movie Camera on.

4 Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.

5 Search for the first still picture from which you want to start printing with the Auto Print Function.
If you want to print all still pictures recorded on the cassette, rewind the tape to its beginning.

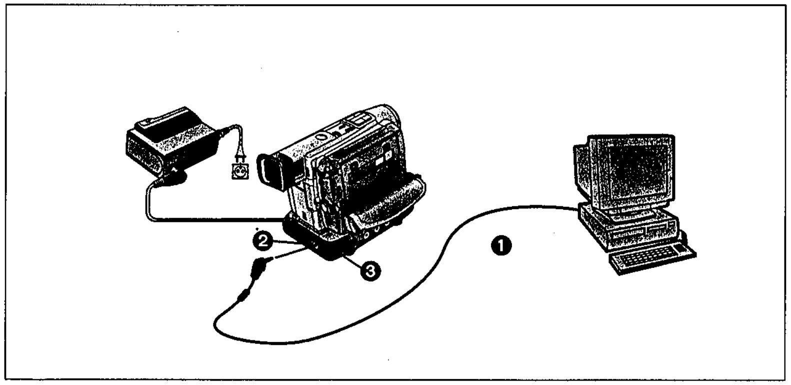
6 Press the [MENU] Button.

7 Set [AUTOPRINT] on the Menu to [ON].
Automatic printing starts.

- If you want to stop the automatic printing in the middle, press the Fade/Stop Button [■] on the Movie Camera.

❶ Edit Cable VW-K5E (optional)
❸ Video Cable (supplied with the Video Printer)
❹ S-Video Cables (supplied with the Movie Camera and Video Printer)
❺ Edit Socket

- When the cooling function of the Video Printer is activated and the printing speed slows down, the automatic printing may stop. In this case, set [AUTOPRINT] to [ON] again.
- If you replace the ink cassette or paper during printing, the same picture may be printed twice.
- If still pictures are recorded successively in the Photoshot Mode, some pictures may be skipped during printing.
- Before storing an image in memory on the Video Printer, press the [OSD] Button (➔ 54) on the Remote Controller of the Movie Camera so that no indications appear in the picture. Otherwise, the Counter Indication and other function indications are also printed in the picture.
- In the following cases, some pictures may be skipped when printing by using the Auto Print Function.
  - When you print still pictures recorded in the Photoshot Mode on the video camera of another brand.
  - If you turn the Movie Camera on and several times (3 times or more) between recording two still pictures in the Photoshot Mode.
  - When you record a still picture in the Photoshot Mode on the same part of a cassette where a photoshot picture was recorded before.
  - When you selected a different recording speed (SP/LP) between the recording two still picture in the Photoshot Mode.
  - At the first Photoshot Picture to be printed.



Using the Movie Camera with a Computer

The Personal Computer Connection Kit VW-DTA1E (optional) for digital video cameras makes it possible to connect the Movie Camera to a computer and transmit still video images to it. (The Output Terminal Box [AV ONE TOUCH STATION] is also necessary.)

Computer System Requirements

DV STUDIO can be installed in a PC/AT personal computer which can run Microsoft® Windows® 95.

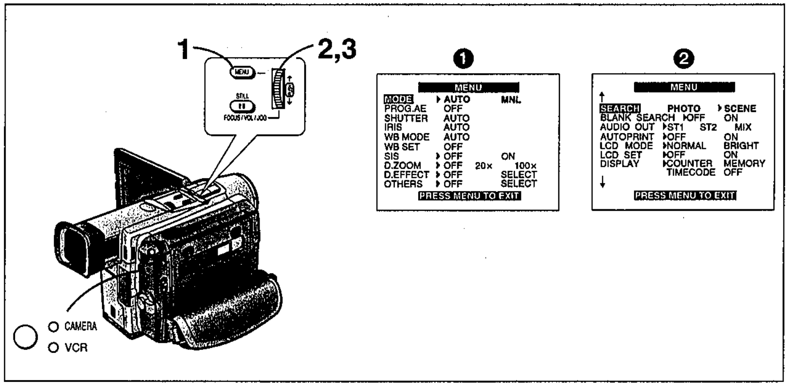
Compatible machines:	Personal computer with 80486DX4 or higher CPU (Pentium™ or higher recommended)
Graphic card:	True Color (approx. 16.7 million colours) recommended (operarion also possible even with 256 colours)
Installed memory:	16 MB or more (32MB or more recommended)
Free hard disk space:	At least 10MB
Disk drive:	CD-ROM drive
Serial port:	RS-232C (D-sub 9pin)
Other requirements:	Mouse

To connect the Movie Camera to the computer, use the special Interface Adaptor ❶ contained in the Personal Computer Connection Kit.

- Pictures that you intend to import into computer application should be recorded in the SP Mode.
- When recording, take care that the Time Code is uninterrupted from the beginning of the tape.

- Windows® 95 is a trademark of Microsoft Corporation U.S.A.
- All other company and product names in the operating instructions are trademarks of their respective corporations.

❷ Digital Still Picture Terminal
❸ Output Terminal Box [AV ONE TOUCH STATION]



Using the Menu Screen

This Movie Camera displays the settings of various functions in Menus to make it easy to select the desired functions and settings.

1 Press the [MENU] Button.
The Menu appears.

2 Turn the [PUSH] Dial to select the item to set.
Turning the [PUSH] Dial changes the highlighted item.

3 Press the [PUSH] Dial to set the selected item to the desired mode.
Every press moves the cursor [▶] to the next mode.

Displaying the Camera Mode Menu ❶

Press the [MENU] Button in the Recording Pause Mode.

- While the Menu is displayed, recording is not possible.
- During recording, displaying the Menu is not possible.

Displaying the VCR Mode Menu ❷

Press the [MENU] Button when the [VCR] Lamp is lit.

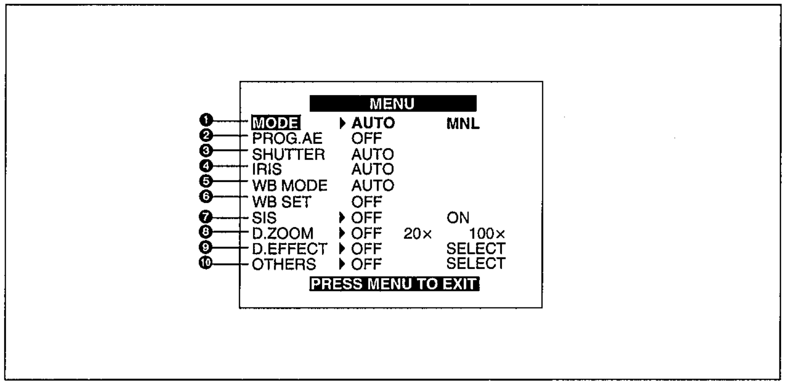
- While the Menu is displayed, playback is not possible.
- During playback, displaying the Menu is possible.

Exiting the Menu

Press the [MENU] Button again.

Note About the Settings Made on the Menu

The settings you selected on the Menu are maintained when you turn the Movie Camera off. However, if you disconnect the power supply unit (Battery or AC Adaptor) from the Movie Camera before turning it off, the selected settings may not be maintained.



```
            MENU
①─MODE      ▸AUTO     MNL
②─PROG.AE    OFF
③─SHUTTER    AUTO
④─IRIS       AUTO
⑤─WB MODE    AUTO
⑥─WB SET     OFF
⑦─SIS       ▸OFF       ON
⑧─D.ZOOM    ▸OFF  20×    100×
⑨─D.EFFECT  ▸OFF       SELECT
⑩─OTHERS    ▸OFF       SELECT
      PRESS MENU TO EXIT
```

Menu Functions

Camera Mode Menu

❶ **Recording Mode [MODE] (→ 30)**

❷ **Auto Exposure Modes [PROG.AE] (→ 70)**

❸ **Shutter Speed [SHUTTER] (→ 86)**

❹ **Iris [IRIS] (→ 88)**

❺ **White Balance Mode Selection [WB MODE] (→ 82)**

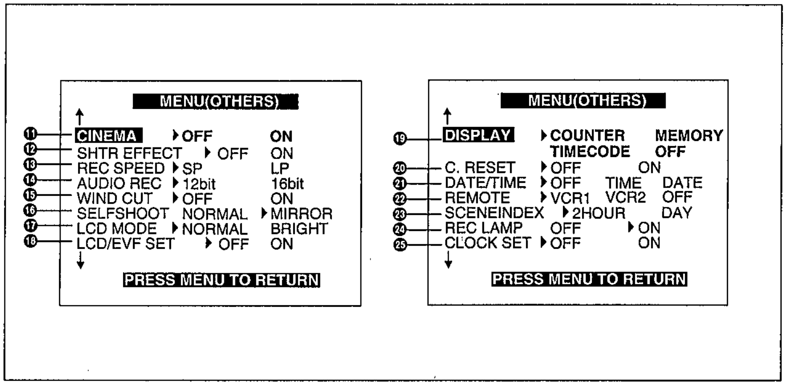
❻ **Manual White Balance Adjustment Mode [WB SET] (→ 84)**

❼ **Super Image Stabilizer [SIS] (→ 44)**

❽ **Digital Zoom [D.ZOOM] (→ 38)**

❾ **Digital Effects [D.EFFECT] (→ 76, 78, 80)**

❿ **Other Items [OTHERS] (→ 124)**
If you set [OTHERS] to [SELECT], the [MENU (OTHERS)] Menu appears.



```
        MENU(OTHERS)
    ↑
⑪─CINEMA      ▸OFF      ON
⑫─SHTR EFFECT  ▸OFF     ON
⑬─REC SPEED  ▸SP        LP
⑭─AUDIO REC  ▸12bit     16bit
⑮─WIND CUT   ▸OFF       ON
⑯─SELFSHOOT  NORMAL   ▸MIRROR
⑰─LCD MODE   ▸NORMAL    BRIGHT
⑱─LCD/EVF SET  ▸OFF     ON
    ↓
     PRESS MENU TO RETURN
```

```
         MENU(OTHERS)
   ↑
⑲─DISPLAY    ▸COUNTER    MEMORY
              TIMECODE   OFF
⑳─C. RESET   ▸OFF         ON
㉑─DATE/TIME  ▸OFF    TIME   DATE
㉒─REMOTE     ▸VCR1   VCR2   OFF
㉓─SCENEINDEX  ▸2HOUR        DAY
㉔─REC LAMP    OFF        ▸ON
㉕─CLOCK SET  ▸OFF          ON
   ↓
      PRESS MENU TO RETURN
```

⑪ **Cinema-like Format Recording [CINEMA] (→ 42)**

⑫ **Shutter Effect [SHTR EFFECT] (→ 40)**

⑬ **Recording Speed Mode [REC SPEED] (→ 24)**

⑭ **Audio Recording Mode [AUDIO REC] (→ 90)**

⑮ **Wind Buffer [WIND CUT]**
If you set [WIND CUT] to [ON], the noise of the wind hitting the Microphone is reduced. However, this also causes a slight deterioration of the sound reproduction in the bass range.

⑯ **Self-Recording [SELFSHOOT] (→ 34)**

⑰ **LCD Lighting Mode [LCD MODE] (→ 132)**

⑱ **LCD and Finder Adjustment [LCD/EVF SET] (→ 132)**

⑲ **Counter Display Mode [DISPLAY] (→ 166)**

⑳ **Counter Reset [C.RESET] (→ 158)**
To reset the counter to zero.
However, the Time Code cannot be reset.

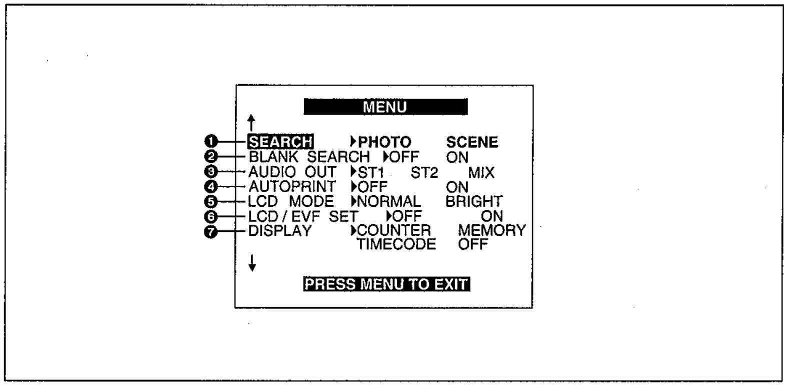
㉑ **Date and Time Indication [DATE/TIME] (→ 46)**

㉒ **Remote Controller Mode [REMOTE] (→ 102)**

㉓ **Scene Index Mode [SCENEINDEX] (→ 62)**

㉔ **Recording Lamp [REC LAMP] (→ 30)**

㉕ **Date and Time Setting [CLOCK SET] (→ 128)**



```
              MENU
   ↑
❶─SEARCH          ▸PHOTO    SCENE
❷─BLANK SEARCH ▸OFF      ON
❸─AUDIO OUT  ▸ST1   ST2    MIX
❹─AUTOPRINT  ▸OFF        ON
❺─LCD MODE   ▸NORMAL     BRIGHT
❻─LCD / EVF SET   ▸OFF      ON
❼─DISPLAY        ▸COUNTER   MEMORY
                  TIMECODE  OFF
   ↓
         PRESS MENU TO EXIT
```

VCR Mode Menu

❶ **Index Search [SEARCH] (→ 64, 66)**

❷ **Blank Search [BLANK SEARCH](→ 60)**

❸ **Audio Output Mode [AUDIO OUT] (→ 92)**

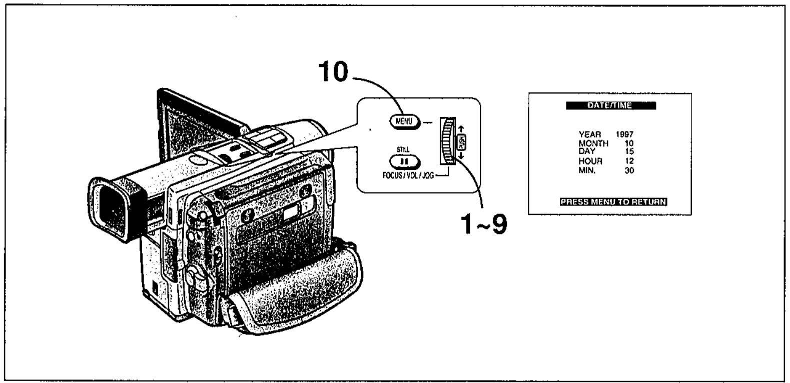
❹ **Automatic Printing [AUTOPRINT] (→ 114)**

❺ **LCD Lighting Mode [LCD MODE] (→ 132)**

❻ **LCD and Finder Adjustment [LCD/EVF SET] (→ 132)**

❼ **Counter Display Mode [DISPLAY] (→ 166)**

- **All other items on the VCR Mode Menu not shown above are the same as on the Camera Mode Menu. (→ 124)**

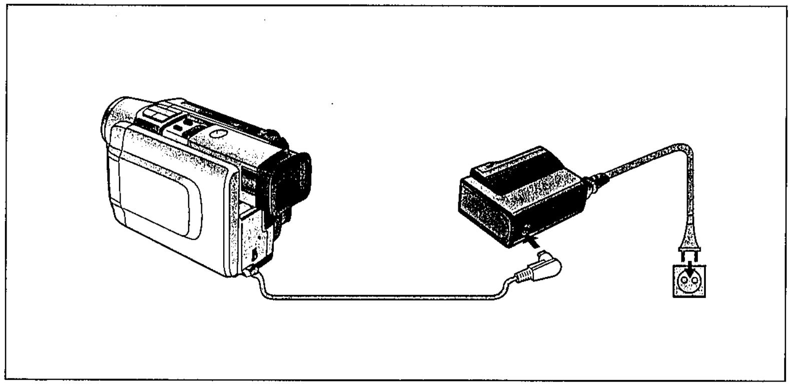

10
MENU
STILL
FOCUS / VOL / JOG
PUSH
1~9
DATE/TIME
YEAR 1997
MONTH 10
DAY 15
HOUR 12
MIN. 30
PRESS MENU TO RETURN

Setting the Date and Time

Selecting [OTHERS] on the Menu (either Camera or VCR Mode Menu) and setting [CLOCK SET] to [ON] displays the menu shown above. (➔ 124)

For example: To set the clock to 15th October 1997, 12:30.

1. **Turn the [PUSH] Dial to set to [1997].**
2. **Press the [PUSH] Dial to select [MONTH].**
3. **Turn the [PUSH] Dial to set to [10].**
4. **Press the [PUSH] Dial to select [DAY].**
5. **Turn the [PUSH] Dial to set to [15].**
6. **Press the [PUSH] Dial to select [HOUR].**
7. **Turn the [PUSH] Dial to set to [12].**
8. **Press the [PUSH] Dial to select [MIN.].**
9. **Turn the [PUSH] Dial to set to [30].**
10. **Press the [MENU] Button to finish the date and time setting.**
    The operation of the clock starts from [00] seconds.

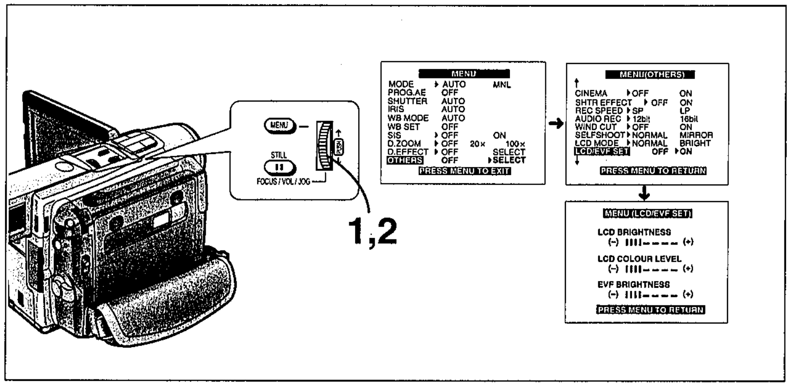


- As small imprecisions in the time indication can occur, we recommend that you confirm that the time shown is correct before you start recording. When the [🕓] Indication appears, charge the built-in battery and set the date and time.
- The years change in the following order:
  1990 → 1991 → ... → 2089 → 1990 →..

Charging the Built-in Battery
The built-in battery maintains the operation of the clock. When the [🕓] Indication appears, the built-in battery is discharged. Charge the discharged battery in the following way and after charging is finished, set the date and time.

1. **Connect the AC Adaptor to the Movie Camera and to an AC mains socket. (➔ 16)**
2. **Leave the Movie Camera turned off.**
3. **Leave the Movie Camera in this condition for approximately 4 hours.**
   After charging for 4 hours, the bult-in lithum battery can power the clock for approximately 3months.

NV-DS5 ONLY


MENU
STILL
FOCUS / VOL / JOG
PUSH
1,2
MENU
MODE ▸AUTO MNL
PROG.AE OFF
SHUTTER AUTO
IRIS AUTO
WB MODE AUTO
WB SET OFF
SIS ▸OFF ON
D.ZOOM ▸OFF 20× 100×
D.EFFECT ▸OFF SELECT
OTHERS OFF ▸SELECT
PRESS MENU TO EXIT
MENU(OTHERS)
CINEMA ▸OFF ON
SHTR EFFECT ▸OFF ON
REC SPEED ▸SP LP
AUDIO REC ▸12bit 16bit
WIND CUT ▸OFF ON
SELFSHOOT ▸NORMAL MIRROR
LCD MODE ▸NORMAL BRIGHT
LCD/EVF SET OFF ▸ON
PRESS MENU TO RETURN
MENU (LCD/EVF SET)
LCD BRIGHTNESS
(–) IIII– – – – (+)
LCD COLOUR LEVEL
(–) IIII– – – – (+)
EVF BRIGHTNESS
(–) IIII– – – – (+)
PRESS MENU TO RETURN

Adjusting the LCD Monitor

Selecting [OTHERS] on the Menu (either Camera or VCR Mode Menu) and setting [LCD/EVF SET] to [ON] displays the following items. (➔ 120-124)

LCD Brightness [LCD BRIGHTNESS]
To adjust the brightness of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.
LCD Colour Level [LCD COLOUR LEVEL]
To adjust the colour saturation of the LCD screen. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the stronger are the colours.
Finder Brightness [EVF BRIGHTNESS]
To adjust the brightness of the Finder. The Bar Indication is divided into 8 steps. The more vertical bars are shown, the brighter is the screen.

1. **Press the [PUSH] Dial to select the item that you want to adjust.**
2. **Turn the [PUSH] Dial. Turning it increases or decreases the vertical bars of the Bar Indication.**

Boosting the Brightness of the Whole LCD Monitor
Setting [LCD MODE] on the [MENU (OTHERS)] Menu to [BRIGHT] brightens up the LCD Monitor.

- These adjustments have no influence on the actually recorded picture.

Cautions for Use

Take care that no water enters the Movie Camera when using it in the rain and snow or on the beach.

- The Movie Camera and the cassette could become damaged. (It may not be repairable.)

Keep the Movie Camera away from magnetized equipment (TVs, TV games, etc.).

- If you use the Movie Camera on or near a TV, the electromagnetic radiation may cause picture and sound distortion.
- Strong magnetic fields generated by speakers and large motors may damage the recordings on tape and distort the picture.
- The electromagnetic radiation from micro-computers can adversely influence the Movie Camera and cause picture and sound distortion.
- If the Movie Camera is adversely influenced by magnetized equipment and does not work correctly, turn the Movie Camera off, remove the Battery or disconnect the AC Adaptor and insert the Battery or connect the AC Adaptor again. Then turn the Movie Camera on.

Do not use the Movie Camera near a radio transmitter or high-voltage power line.

- If you record near a radio transmitter or high-voltage power line, the recorded picture and sound may be adversely influenced.

Do not use the Movie Camera for surveillance and other industrial applications.

- If the Movie Camera is being used for a long time, the inside temperature rises and this may cause malfunction.
- This Movie Camera is not designed for industrial use.

Take care that no sand and fine dust enters the Movie Camera when using it on a beach or similar places.

- The sand and dust could damage the Movie Camera and cassette. (Be careful when inserting and removing the cassette.)

Take care not to drop the Movie Camera when carrying it.

- Strong shocks could damage the body of the Movie Camera and cause malfunction.
- When carrying, hold the Movie Camera by the Grip Belt or Shoulder Strap and handle it with care.

Do not spray an insecticide or volatile agents on the Movie Camera.

- Such agents could deform the body and cause the surface coating to peel off.
- Do not bring the Movie Camera in direct contact with rubber or plastic products for a long time.

Do not use benzine or thinner for cleaning.

- Before cleaning, remove the Battery or unplug the AC Mains Cable from the AC mains socket.
- They could deform the body and cause the surface coating to peel off.
- Wipe the Movie Camera with a soft, clean cloth. To remove persistent stains, wipe with a cloth moistened with mild detergent diluted with water and finish with a dry cloth.

After use, always take out the cassette and remove the Battery or unplug the AC Mains Cable from the AC mains socket.

- If you leave the cassette in the Movie Camera, the tape can become loosened and damaged.
- If you leave the battery in the Movie Camera for a long time, the voltage level may drop very low so that the Battery cannot be used any more even after charging.

■ Condensation

Determining Whether the Condensation Has Formed Inside and Remedy for Condensation

If the Condensation indication flashes after you turn on the Movie Camera, condensation has formed inside the Movie Camera. In this case, the Movie Camera automatically switches off after a few seconds.
Remedy as follows:

1 **Take out the cassette.**
All other functions do not work. Depending on the amount of condensation, it may not be possible to take out the cassette. In this case, wait 2 - 3 hours before taking out the cassette.

2 **Leave the Cassette Compartment open and wait for 2 - 3 hours.**
The required time depends on the amount of condensation and the ambient temperature.

3 **After 2 - 3 hours, turn the Movie Camera on and check if the Condensation Indication is not displayed.**
Even if the Condensation Indication is no longer displayed, wait 1 more hour for added safety before using the Movie Camera again.

Pay Attention to Condensation Even Before the Condensation Indication Appears.

- As condensation forms gradually, the Condensation Indication may not appear for 10 - 15 minutes after the condensation has formed inside.
- In an extremely cold place, the condensation could freeze and turn into frost. In such a case, it takes an additional 2 - 3 hours for the frost to first melt into condensation and then to be dissolved.

Remedy for a Fogged-up Lens

Set the [POWER ON/OFF] Switch to [OFF] and leave the Movie Camera in this condition for about 1 hour. When the lens has reached about the same temperature as its surroundings, it automatically clears up.

■ Video Heads Clogging and Remedy

If the video heads (which contact the tape) are dirty, the playback picture contains rectangular blocks of picture noise or the whole screen becomes blue. If they are very dirty, the recording performance deteriorates and in the worst case, recording may not be possible at all.

Causes of Dirty Video Heads

- A lot of dust in the air.
- High-temperature and high-humidity environment.
- Damaged tape.
- Long-time use.

Periodic Inspection

To ensure optimum picture quality, we recommend that you have worn out parts such as video heads replaced after approximately 1000 hours of use. (However, this depends considerably on the conditions of use such as temperature, humidity and dust.)

■Optimum Use of the Battery

Special Characteristics of the Battery

This Battery is a rechargeable lithium-ion battery. Its ability to generate electric energy is based on an internal chemical reaction. This reaction is easily influenced by ambient temperature and humidity, and the useful operation time that the Battery can provide becomes shorter at high and low temperatures. When used in extremely cold surroundings, the Battery may only be able to provide approximately 5 minutes of operation time. If the Battery becomes extremely hot, a protection function is activated and prevents the use of the Battery for some time.

After Use Always Take Out the Battery.

Be sure to remove the Battery from the Movie Camera. (If it is left in the Movie Camera, a small amount of electric current is consumed even if the Movie Camera is turned off.) Leaving the Battery inserted in the Movie Camera for a very long time could cause it to become excessively discharged, so that it cannot be used any more even after charging.

Discarding a Battery That Has Become Unusable

- The usable life of the Battery is limited.
- Do not throw the Battery in a fire because it could explode.

Keep the Battery's Terminals Clean.

Be careful that the terminals (the two small round opening) do not get plugged up with dust, dirt or other substances.
If you accidentally drop the Battery, confirm that the terminals are not deformed.
Inserting a deformed Battery in the Movie Camera or attaching it to the AC Adaptor could damage the Movie Camera or the AC Adaptor.

■Precautions for Storage

Before storing the Movie Camera, take out the cassette and remove the Battery.
Store all equipment in a dry place where the temperature remains relatively constant.
(Recommended temperature is 15°C - 25°C and recommended relative humidity is 40% - 60%.)

Movie Camera

- Wrap it with a soft cloth to prevent dust from entering.

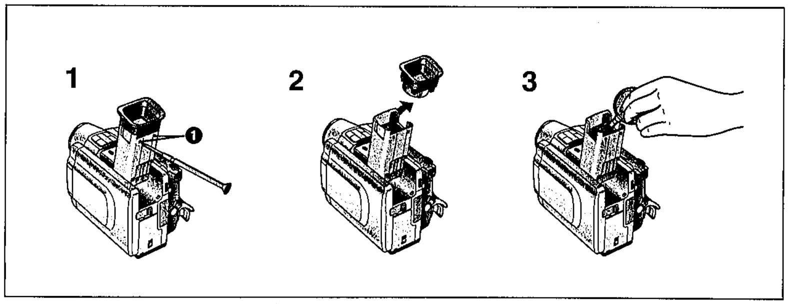
Battery

- Extremely low or high temperature shortens the Battery life.
- Storing it in places with oily smoke and a lot of dust could cause the terminals to get rusty and this can result in malfunction.
- **Do not allow metal objects (such as necklaces and hair pins) to touch the battery terminals. Short-circuiting may occur and generate heat, and touching it in this condition could inflict serious burns.**
- Store the Battery in discharged condition.If you store the Battery for a long time, we recommend that you charge it once a year and completely use up the charge before storing it again in discharged condition.

Cassette

- Rewind the tape to its beginning before storing.
  Leaving the cassette with the tape stopped halfway for more than 6 months (depending on the storing condition) loosens the tape. Be sure to rewind it to the beginning.
- Put the cassette in its case and store it.
  Dust, direct sunlight (ultraviolet rays) and humidity could damage the tape. Dust contains hard mineral particles and cassettes with dust damage the video heads and other parts of the Movie Camera. Make it a habit to always put the cassette back in its case.
- Completely wind the tape forward and then rewind it once every half year. Leaving the cassette for more than a year without winding/rewinding it may deform the cassette because of swelling and shrinking of the tape due to changes in temperature and humidity. Also, the tape may stick together.
- Do not place the cassette near strongly magnetized objects or equipment.
- The tape surface is coated with microscopic magnetic particles and they record signals. Such objects as magnetic necklaces and toys have stronger magnetic force than commonly thought, and this could erase the recorded contents and cause noise in picture and sound.

NV-DS5 ONLY



■ LCD Monitor and Lens Hood

LCD Monitor

- In places where large differences in temperatures occur, condensation may form on the LCD Monitor. Wipe it with a soft, dry cloth.
- When the Movie Camera is very cold when it is turned on, the LCD Monitor is initially a little darker than normally. However, as the internal temperature rises, the LCD Monitor regains its normal brightness.
- Extremely high precision technology is employed in producing the LCD Monitor. The result is more than 99.99% effective pixels with a mere 0.01% of the pixels inactive or always lit.

Lens Hood

- If you want to attach a filter from the Filter Kit (optional), be sure to first remove the Lens Hood.
  However, during recording in the Cinema Mode with a filter attached, the four corners of the picture may become dark (vignetting effect), when you push the [W/T] Zoom Lever toward [W].

■ Cleaning the Finder

If dust has entered the Finder, clean it in the following way:

1 **Unscrew the screw ➊.**
2 **Remove the Eyecup.**
3 **Remove the dust with a blower brush (not supplied).**
4 **Reattach the Eyecup.**
5 **Tighten the screw ➊.**

■Repeat Playback

- If you keep the Playback Button [▶] pressed for more than 5 seconds, the Movie Camera switches over to the Repeat Playback Mode and the [R▷] Indication appears. (To cancel the Repeat Playback Mode, set the [POWER ON/OFF] Switch to [OFF].)

Glossary

■Digital Video System

In the digital video system, picture and sound are converted into the digital signals and recorded onto tape. This completely digital recording allows recording and playback of picture and sound with minimum quality deterioration.
In addition, such data as Time Code, Date and Time are also automatically recorded as digital signals.

Features

- Superior picture resolution
- Excellent signal-to-noise ratio
- Stable pictures
- Minimised quality deterioration in dubbing
- Minimised cross colour distortion
- PCM digital sound
- No picture deterioration in LP Mode
- 6.35 mm-wide tape
- Compact cassette with long recording time
- Minimised quality deterioration in editing
- Time Code editing

Compatibility with S-VHS or VHS Cassettes

As this Movie Camera uses a digital method for recording picture and sound, there is no compatibility with conventional S-VHS or VHS video equipment using analog recording methods.
In addition, the size and shape of the cassette are completely different.

Compatibility with Output Signals

As the video and audio signals output from the audio and video output sockets are analog — the same as in conventional video systems — you can connect this Movie Camera to your S-VHS or VHS VCR or TV for playback.

PCM Sound

For recording of the sound, this Movie Camera offers the choice between two different PCM Audio Recording Modes.

- 16 bit 48 kHz 2 channels
- 12 bit 32 kHz 4 channels

The "16-bit, 48 kHz, 2 channels" Mode offers superior recording sound quality.
The "12 bit, 32 kHz, 4 channels" Mode lets you record the original sound on two channels and the dubbed sound on two separate channels.

Sub Code

The digital recording system offers the added capability of recording sub code containing various data.
The following data is recorded as sub code on this Movie Camera:

- Time code
- Recording date and time
- Index signals for locating the recorded still images recorded in the Photoshot Mode
- Index signals for locating the beginning of scenes marked with index signal

■Focus

If you look at an object through a magnifying glass and move it closer or further away from your eye, you will reach a point where the object becomes clearly visible. Being focused or in focus means that the subject can be seen with optimum clarity and sharpness.

Human Eyes

Human eyes have lenses as well, and when we look at objects at different distances, the shape of these lenses changes automatically so that we can always see these objects clearly.

Movie Camera

The image of the subject enters the Movie Camera through the lens and is converted into an electric signal (video signal) for recording onto magnetic tape. The focus is adjusted either manually or automatically by moving a focusing lens.

Auto Focus Adjustment

The Auto Focus System automatically moves the internal focusing lens forward or backward and adjusts the focus so that the subject can be seen clearly.
The Auto Focus Adjustment has the following characteristics:

- It adjusts until the vertical contours of the subject are as sharp and clean as possible.
- It adjusts the focus on the subjects with strong contrast.
- It adjusts the focus on the subject in the centre of the LCD Monitor or Finder.
  Unlike human eyes, the lens of the Movie Camera cannot instantaneously change the focus from a nearby to a distant subject.

For the following subjects and recording situations, the Auto Focus System cannot provide precise adjustment.
Use the Manual Focus Mode instead. (➔ 36)

❶ **Recording subjects with a part of it near the Movie Camera and another part far away from it**
As the Auto Focus adjusts on the centre part of the image, it is often impossible to bring the nearby and distant parts of the subject into focus.
When you want to record a person with a distant mountain in the back, it is not possible to focus on both.

❷ **Recording subjects behind glass covered with dirt or dust**
As the focus is adjusted on the dirty glass, the subject behind the glass is out of focus. When recording a subject across a street on which cars are running, the focus may be adjusted on the cars.

❸ **Recording subjects in dark surroundings**
As the amount of light information entering through the lens is greatly reduced, the Movie Camera cannot adjust the focus precisely.

❹ **Recording subjects surrounded by the objects with shiny surfaces or much light reflection**
As the Movie Camera adjusts the focus on the objects with shiny surfaces or much light reflection, the subject may go out of focus.
Therefore, when recording at a lake or the sea, evening scenes, fireworks or under special types of lighting, the subject may be out of focus.

❺ **Recording fast-moving subjects**
As the internal focusing lens is moved mechanically, it cannot follow fast-moving subjects without delay. Therefore, subjects like children running back and forth may temporarily go out of focus.

❻ **Subjects with weak contrast**
As the Movie Camera adjusts the focus based on vertical contours in the picture, subjects with little contrast such as a white wall may be out of focus.

■White Balance Adjustment

While most recording with a Movie Camera is probably done outdoors under sunlight, video recording is also done very often under artificial light sources, both indoors and outdoors. However, each of these light sources gives the subject slightly different colours.

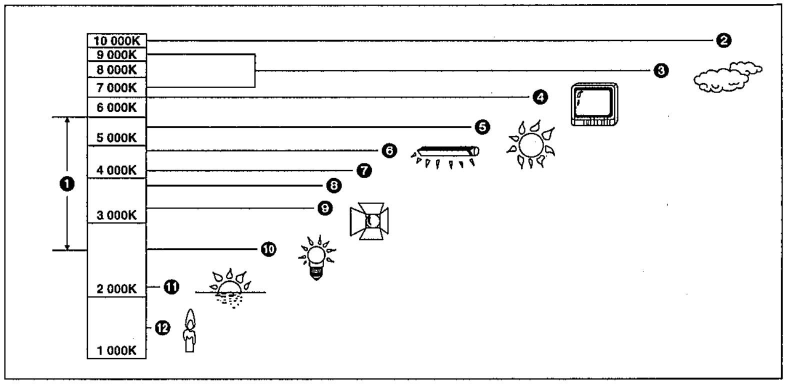
Human Eyes
Human eyes can easily adjust to different kinds of lighting and see an object with the same colours even under different lighting.

Movie Camera
Unlike human eyes, the Movie Camera does not have the innate ability to adapt to changes in lighting, and they influence the colours being recorded. Therefore, depending on the light source, the picture may be recorded with a bluish or reddish tint. To minimise the influence of the lighting on the colours of the subject, an adjustment called White Balance Adjustment is necessary.

White Balance Adjustment
The White Balance Adjustment determines the colour of the light and adjusts the colours so that white remains pure white. As white is the basic colour of the entire colour spectrum, if white is reproduced correctly, the other colours are correct and natural, too.

Auto White Balance Adjustment
This Movie Camera stores the optimum settings for several common light sources in memory. The Movie Camera judges the recording situation by determining the tint of the image received through the lens and by the **White Balance Sensor** (➔ 14), and it selects the setting for the most similar tint. This function is called Auto White Balance Adjustment.
However, as the white balance settings for only several light sources are stored in memory, the white balance is not correctly adjusted for lighting conditions other than those stored in memory.

For the range of different types of lighting within which the Auto White Balance Function can provide precise adjustment, refer to the chart above (➔ 156). For recording under lighting conditions outside this range, the Auto White Balance Function does not work correctly, and the recorded picture has a red or blue cast. However, the same applies, if the subject is lit by more than one light source, even if these light sources are within the above range.



■Colour Temperature

Every light source has its own colour temperature measured in Kelvin (K). The higher the Kelvin value, the more bluish the light; the lower the value, the more reddish the light. The Kelvin value is related to the tint of the light, but not directly to its brightness.
The range ❶ indicated in the illustration above shows the light sources for which this Movie Camera can provide precise white balance adjustment and, therefore, natural colours in the recorded pictures, when using the Full Auto Mode. For light sources outside this range, adjust the white balance manually (➔ 84). Also, additional lighting may be necessary.

❶ Control range of this Movie Camera's Auto White Balance Adjustment Mode

❷ Blue sky

❸ Cloudy sky (Rain)

❹ TV screen

❺ Sunlight

❻ White fluorescent lamp

❼ 2 hours after sunrise or before sunset

❽ 1 hour after sunrise or before sunset

❾ Halogen light bulb

❿ Incandescent light bulb

⓫ Sunrise or sunset

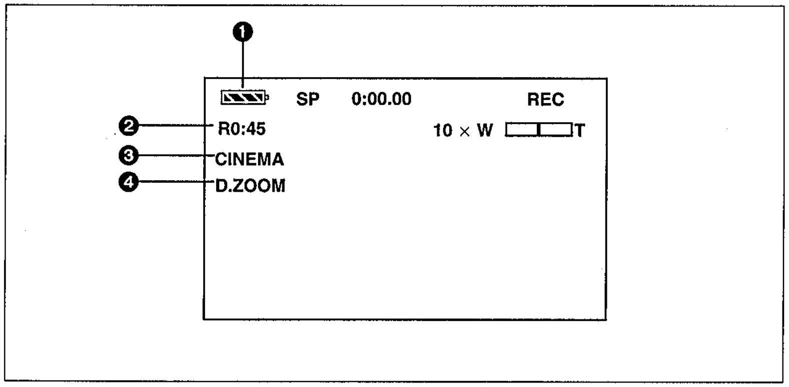
⓬ Candlelight

■Time Code
Time Code signals are the data which indicates the time in hours, minutes, seconds and frames (25 frames/sec). Having this data included in the recording gives every single picture on the tape its own address.
- Time Code is automatically recorded as part of the sub code with every recording you make.
- When you insert a new (previously unrecorded) cassette, the Time Code automatically starts from zero. If you insert a recorded cassette, the Time Code continues where the time code of the last previous scene stopped. (In this case, the zero indication (0h:00m:00s:00f) may appear after inserting the cassette, but when the recording starts, the Time Code records from the previous value.
- You cannot reset the Time Code to zero by pressing the [RESET] Button.
- In playback modes other than the Normal Playback Mode, the Time Code may not be displayed (or not be correct).
- Unless the Time Code is recorded continuously from the beginning of the tape, precise editing may not be possible. To ensure that the Time Code will be recorded without interruption, we recommend that you use the Camera Search Function (➔ 58) or Blank Search Function (➔ 60) before starting to record a new scene.

■Memory Stop Function
The Memory Stop Function is convenient for the following operations.

Rewinding or fast-forwarding the tape to a desired position
1 **Reset the Tape Counter at the tape position from which you want to play back later.**
2 **Set [DISPLAY] on the Menu to [MEMORY]. (➔ 120-126)**
3 **Start playback or recording.**
4 **After playback or recording is finished:**
Press the [VCR/CAMERA] Button so that the [VCR] Lamp lights.
5 **Rewind the tape.**
The tape automatically stops approximately at the position at which you reset the counter to zero.

Stopping the editing automatically in the audio dubbing
1 **Reset the Tape Counter to zero at the tape position at which you want the editing to stop.**
2 **Set [DISPLAY] on the Menu to [MEMORY]. (➔ 120-126)**
3 **Play back a still picture at the point at which you want the audio dubbing to start.**
4 **Start the audio dubbing.**
The audio dubbing automatically stops approximately at the position at which you reset the counter to zero.



Indications on the LCD Monitor / in the Finder

❶ **Remaining Battery Power**
As the remaining battery power decreases, the indication changes as follows: ▨ → ▨ → ▨ → ▭ → ▭
When the battery is completely discharged, the ▭ (▭) Indication flashes.
(When you are using the AC Adaptor, the ▨ Indication may appear, however, this has no meaning in this case.)

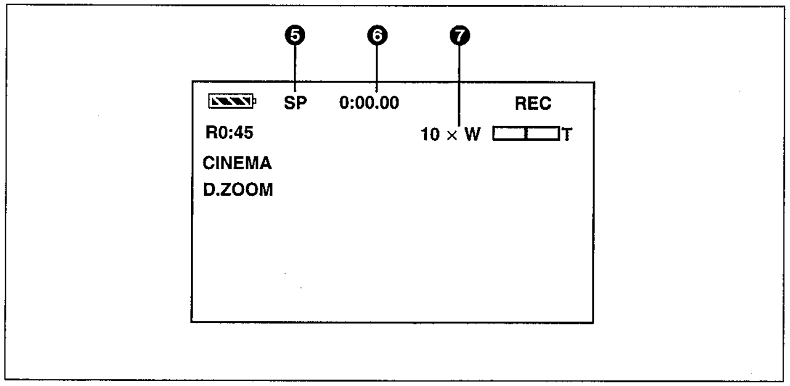
❷ **Remaining Tape Time**
The remaining tape time is displayed in minutes.
(When it becomes less than 3 minutes, the indication starts to flash.)

- If a recording lasts less than 15 seconds, the Remaining Tape Time cannot be displayed correctly.
- The displayed remaining tape time may be shorter than the actual remaining tape time.

❸ **Cinema Mode (➔ 42)**
When recording in the Cinema Mode, this indication is displayed.

❹ **Digital Zoom (➔ 38)**
When the Digital Zoom Function is activated, this indication is displayed.

Digital Effects (➔ 76)
When a digital effect is activated, the corresponding indication is displayed.



❺ **Recording Speed Mode (➔ 24)**
The selected Recording Speed Mode is displayed.
SP: Standard Mode
LP: Long-play Mode

❻ **Tape Counter, Time Code**
The Tape Counter, Memory Stop Function or Time Code Indications are displayed.

❼ **Zoom Magnification (➔ 38)**
When you push the [W/T] Zoom Lever up or down, the Zoom Magnification Indication and the Zoom Gauge are displayed.

Recording Mode Indication (➔ 30)

AUTO:	This appears when [MODE] is set to [AUTO] on the Menu.
MNL:	This appears when [MODE] is set to [MNL] on the Menu.

Super Image Stabilizer (➔ 44)

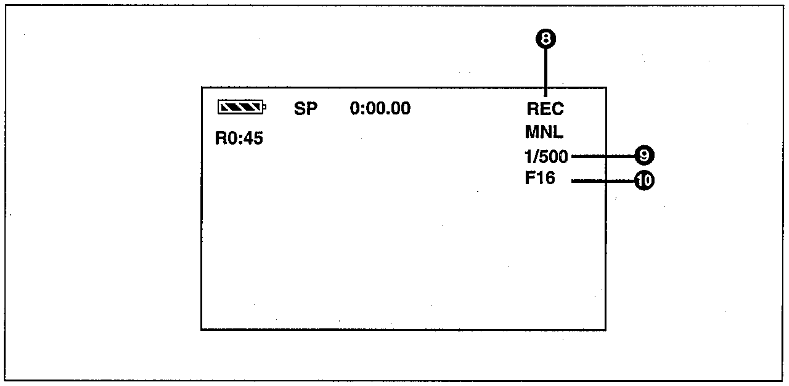
▣:	When the Super Image Stabilizer Function is activated, this indication is displayed.

Audio Recording Mode (➔ 90)

12bit/16bit:	The indication of the Audio Recording Mode that was selected for recording is displayed during playback.

All Photoshots Pictures Printing (➔ 114)

AUTOPRINT:	This indication is displayed when the Auto Print Function is being used.



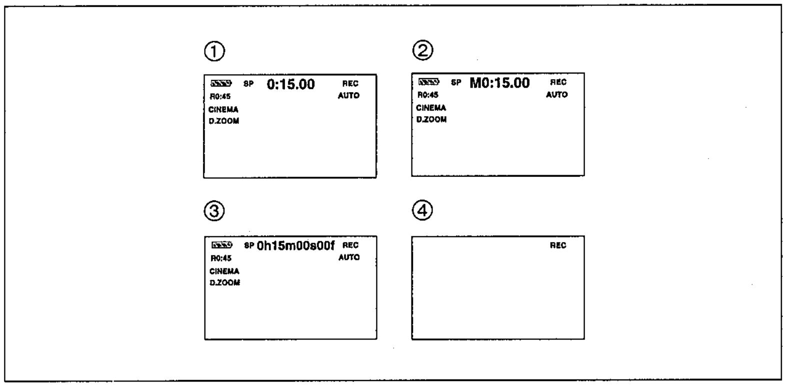
❽ **Tape Run Indications**

RECORD:	Recording (➔ 30)
PAUSE:	Recording pause (➔ 30)
▷:	Playback (➔ 46) / Camera Search in forward direction (➔ 58)
◁:	Camera Search in reverse direction (➔58)
❚❚:	Still playback (➔ 52)
▷▷:	Fast-forward/Cue playback (➔ 46,48)
◁◁:	Rewind/Review playback (➔ 46,48)
❚▷ / ◁❚ :	Slow playback in forward direction/ Slow playback in reverse direction (➔50)
❚❚▷ / ◁❚❚:	Still Advance playback in forward direction / Still Advance playback in reverse direction (➔ 52)
▷▷❚/❚◁◁:	Index Search in forward direction / Index Search in reverse direction (➔ 64,66)
CHK:	Recording check (➔ 32)
A.DUB▷:	Audio dubbing (➔90)
A.DUB ❚❚:	Audio dubbing pause (➔ 90)
PHOTO:	Recording in the Photoshot Mode (➔ 40)
BLANK:	Blank search (➔ 60)
R▷:	Repeat playback (➔ 146)

- When recording with the LCD Monitor facing forward using the Mirror Mode, the above indications do not appear. Only the Remaining Battery Power Indication, the Recording Indication [●] and the Recording Pause Indication [●❚❚] are displayed.

❾ **Shutter Speed**
It appears when you manually adjust the shutter speed.(➔ 86)

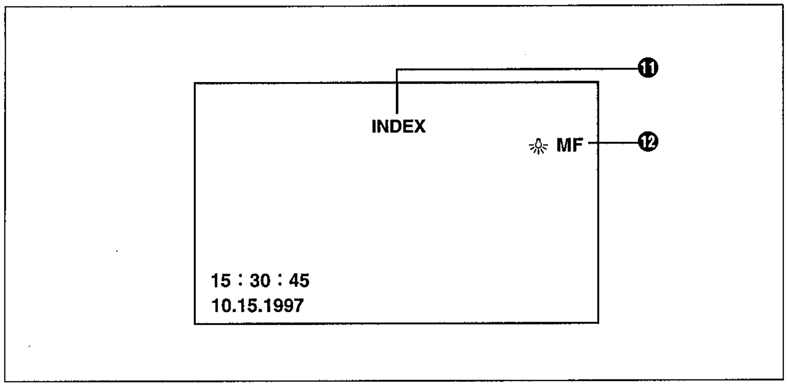
❿ **Iris Value (F Number)**
It appears when you manually adjust the iris.(➔ 88)



Changing the Indications

By changing the setting for [DISPLAY] on the Menu (→ 120-126) or by repeatedly pressing the [DISPLAY] Button on the Remote Controller(→ 94), the Counter Display Mode can be changed in the order shown in the above illustrations ① to ④:

① Tape Counter Indication
② Tape Counter Indication with activated Memory Stop Indication
③ Time Code Indication
④ No Indication
(In this mode, only the Tape Run Indications, Warning/Alarm Indications, Date/Time Indications, the Programme AE Mode Indications, MF Mode Indications, White Balance Mode Indications and Zoom Magnification Indication can be displayed.)



⑪ Index (→ 62)

INDEX: The [INDEX] Indication flashes for a few seconds while an index signal is being recorded.

Search Number (→ 66)

S1: The figure indicates which number of scene ahead from the present scene is to be played back.

⑫ Manual Focus (→ 36)

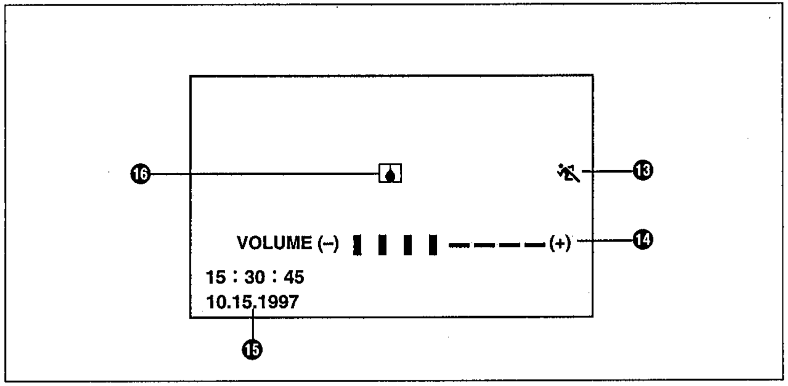
If you select the Manual Focus Mode, the [MF] Indication is displayed.
When the Movie Camera is in the Auto Mode, this indication is not displayed.

White Balance Mode (→ 82)

The White Balance Mode offers the following possible settings:

☼: Indoor (incandescent lamp) Mode
✳: Outdoor Mode
▣: Lock Mode

When the movie Camera is in the Auto Mode, none of the above 3 indications are displayed.



⑬ Programme AE Mode (→ 70)

The Programme AE has the following settings:

⛹ : Sports Mode
👤 : Portrait Mode
🕯: Low Light Mode

⑭ Sound Volume (→ 46)

Use this indication to adjust the volume of the playback sound from the built-in speaker.
With the [VCR] Lamp lit, keep the [PUSH] Dial pressed until the [VOLUME] Indication appears. Turn the [PUSH] Dial to adjust the volume.

⑮ Date and Time (→ 46)

The time is indicated in the 24-hour system.

⑯ Warning/Alarm

When any of the following indications lights or flashes, confirm the condition of the Movie Camera.

▣: Condensation has occurred. (→ 138)
▣: The erasure prevention slider of the inserted cassette is closed (set to [SAVE]).
No cassette is inserted.
▣: The built-in battery is discharged. (→130)
✪: The heads are dirty.
▣END: During recording, the tape has reached its end.
REMOTE: Wrong Remote Controller Mode is selected. (→102)

Before Requesting Service (Problems & Solutions)

Power Supply

P1: The Movie Camera does not turn on.

S1: Is the Battery or the AC Adaptor connected correctly? Confirm the connection. (→ 16)

P2: The Movie Camera has turned off automatically.

S2: If you leave the Movie Camera in the Recording Pause Mode for more than 6 minutes, it automatically switches off to protect the tape and to conserve battery power. (→ 30)

P3: The Movie Camera quickly turns off.

S3-1: Is the Battery discharged? When the Remaining Battery Power Indication is flashing or the [▭] Indication is displayed, the Battery is discharged. Charge the Battery or insert a fully charged Battery. (→ 160)

S3-2: Has condensation formed? If the Movie Camera is brought from a cold to warm place, condensation may form inside. In this case, the Movie Camera automatically switches off and not operations can be performed except taking out the cassette. Wait until the Condensation Indication disappears. (→ 138)

Battery

P1: The Battery discharges quickly.

S1-1: Is the Battery fully charged? Charge it until all 4 Charge Lamps on the AC Adaptor light. (→ 18)

S1-2: Are you using the Battery in a place where the temperature is very low? The ambient temperature greatly influences the Battery's performance. Its operation time becomes shorter in a cold place. (→ 142)

S1-3: Has the Battery reached the end of its service life? The service life of the Battery is limited. It depends on the way the Battery is used, but when the operation time even after proper charging is too short for normal use, the service life of the Battery has reached its end.

Normal Recording

P1: Recording cannot be started even though the Movie Camera is supplied with power and the cassette is inserted correctly.

S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), recording is not possible. (→ 22)

S1-2: Has the tape reached its end? Insert a new cassette. (→ 22)

S1-3: Is the Movie Camera turned on? (→ 30)

S1-4: Is the [VCR] Lamp lit? If it is lit, recording is not possible. (→ 46)

S1-5: Is the Condensation Indication [▲] displayed? When condensation has formed, no functions except taking out the cassette can be operated. Wait until the Condensation Indication disappears. (→ 138)

Other Recording

P1: The picture on the LCD Monitor/Finder suddenly stands still for a few seconds.

S1-1: Did you press the [PHOTO SHOT] Button? If you press the [PHOTO SHOT] Button, a still picture is recorded for approximately 7 seconds. After approximately 7 seconds, the Movie Camera switches back to the Recording Pause Mode. (→ 40)

S1-2: Did you press the Still Button [❚❚]? If you press the Still Button [❚❚], the picture stands still. Simply pressing this button again to return to the normal moving picture. (→ 44)

P2: The Auto Focus Function does not work.

S2-1: Is the Manual Focus Mode selected? If you select the Auto Focus Mode, the focus is adjusted automatically. (→ 36)

S2-2: Is the recording subject or situation suitable for the Auto Focus Mode? The Auto Focus Function does not work correctly for some kinds of subjects and recording situations. In this case, use the Manual Focus Mode to adjust the focus. (→ 152)

Editing

P1: Audio dubbing cannot be performed.

S1-1: Is the erasure prevention slider of the cassette open? If it is open (set to [SAVE]), editing is not possible. (→ 22)

S1-2: Are you trying to edit parts of the tape recorded in the LP Mode? As the tracks recorded in the LP Mode are narrower than the heads, audio dubbing is not possible. (→ 24)

Indications

P1: The Time Code becomes incorrect.

S1: In the Slow Motion Playback Mode in reverse direction, the counter of the Time Code Indication may not be stable, however, this is not a malfunction.

P2: The Remaining Tape Time Indication disappears.

S2: If you record a still picture in the Photoshot Mode, the Remaining Tape Time Indication disappears temporarily. However, if you switch the Movie Camera over to the Normal Recording Mode, it appears again.

P3: The Remaining Tape Time Indication does not match the actual remaining tape time.

S3-1: If scenes of less than 15 seconds are recorded successively, the remaining tape time is not indicated correctly.

S3-2: The Remaining Tape Time Indication may show a remaining tape time that is 2 - 3 minutes shorter than the actual remaining tape time.

Playback (Picture)

P1: No playback picture is reproduced when pressing the Play Button [▶].

S1: Did you press the [VCR/CAMERA] Button so that the [VCR] Lamp lights? When the [VCR] Lamp is not lit, no playback functions can be operated. (→ 46)

P2: Mosaic-like patterns appear in the picture during Cue, Review or Slow Motion Playback.

S2: This phenomenon is a characteristic of the digital video system. This is not a malfunction. (→ 48)

P3: I want to play back the picture on a TV.

S3: If you attach the Output Terminal Box to the Movie Camera, you can connect the Movie Camera to a TV. (→ 54)

P4: The Movie Camera is correctly connect to a TV correctly, but no playback picture is reproduced.

S4: Did you select "Video Input" on the TV? Carefully read the operating instructions for your TV and select the channel that matches the input sockets used for connection.

P5: The playback picture is not reproduced clearly.

S5: Are the video heads on the Movie Camera dirty? If the video heads are dirty, the picture cannot be played back clearly.

Playback (Sound)

P1: No sound is played back from the Movie Camera's built-in speaker.

S1: Is the volume set too low? With the [VCR] Lamp lit, keep the [PUSH] Dial pressed until the [VOLUME] Indication appears. Then turn the [PUSH] Dial to adjust the volume. (→ 46)

P2: Different sounds are played back together.

S2: Is [AUDIO OUT] set to [MIX] on the VCR Mode Menu? If you have performed audio dubbing on a cassette for which you set [AUDIO REC] to [12bit] when recording, the original sound and the sound dubbed with audio dubbing are played back together. It is also possible to play them back individually. (→ 92)

P3: The original sound was erased by performing audio dubbing.

S3: If you perform audio-dubbing on a recording made in the [16bit] Mode (→ 90), the original sound is erased. If you want to keep the original sound, be sure to select the [12bit] Mode for the original recording.

Others

P1: The cassette cannot be taken out.

S1: Is the Movie Camera supplied with power? Is the AC Adaptor correctly connected or the Battery correctly inserted? To remove the cassette, the Movie Camera must be supplied with power, however, it is not necessary to set the [POWER ON/OFF] Switch to [ON].

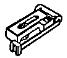
P2: No operation except taking out the cassette can be performed.

S2: Is the Condensation Indication [[▲]] displayed? If condensation has formed inside the Movie Camera, it automatically switches off and prevents any operation except taking out the cassette. Wait until the Condensation Indication disappears. (→ 138)

P3: The Remote Controller does not work.

S3-1: Is the button-type battery in the Remote Controller exhausted? If the Remote Controller does not work if you use it near the Remote Controller Sensor on the Movie Camera, the button-type battery is exhausted. Replace it with a new battery. (→ 100)

S3-2: Is the correct Remote Controller Mode selected? If the Movie Camera's setting for [REMOTE] on the Menu and the mode selected on the Remote Controller are not matched, operating the Movie Camera with the Remote Controller is not possible and the [REMOTE] Indication is displayed. (→ 102)

❶ VW-VBD1E 	❷ VW-VBD2E 	❸ CGR-B/814 	❹ VW-KBD1E 	❺ VW-K10E 	❻ VW-LW3007E
❼ VW-LT3014E 	❽ VW-LF30E 	❾ VW-VMS1E 	❿ VW-SK9E 	⓫ VZ-CT55E 	⓬ VW-EC500E
⓭ VW-EC1E 	⓮ VW-VT1E 	⓯ VW-DTA1E 	⓰ VW-K5E 	⓱ VW-CD1E 	

Optional Accessories

❶ Battery Pack (Lithium)

❷ Battery Pack (Lithium, Large Capacity)

❸ Battery Pack (Lithium, Large Capacity)

❹ Car Battery Charger

❺ 5-Pin Synchro Cord

❻ Wide Conversion Lens

❼ Tele Conversion Lens

❽ Filter Kit

❾ Stereo Zoom Microphone

❿ Shoe Adaptor

⓫ Tripod

⓬ Editing Controller

⓭ Editing Controller

⓮ Video Titler

⓯ Personal Computer Connection Kit

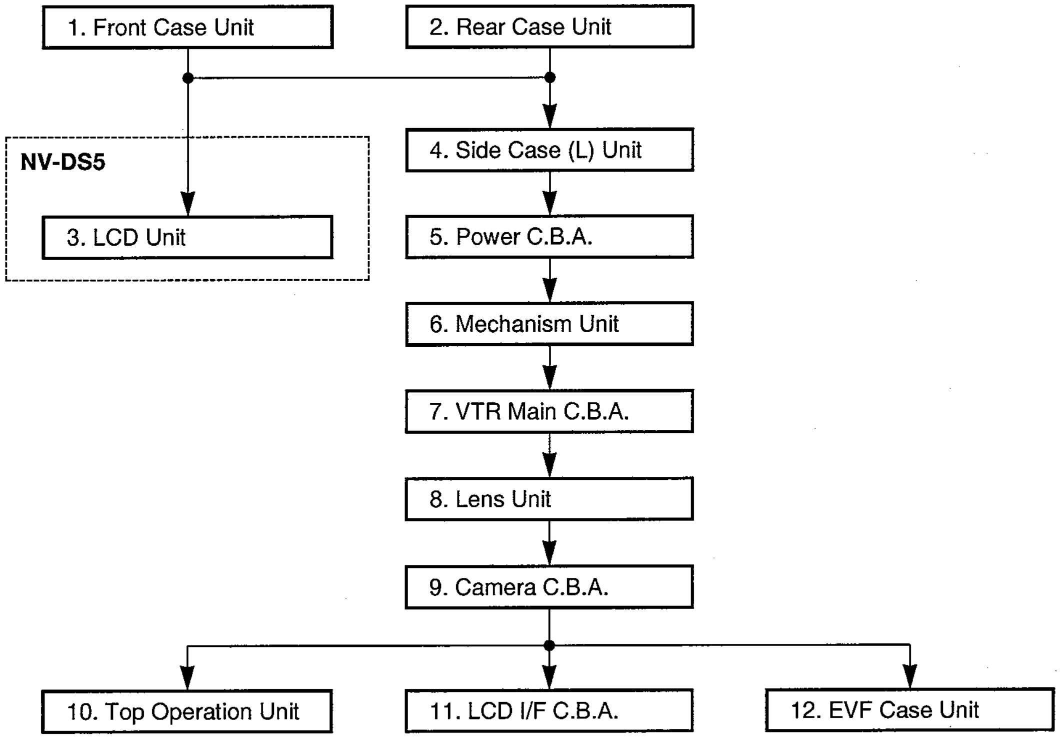
⓰ Edit Cable

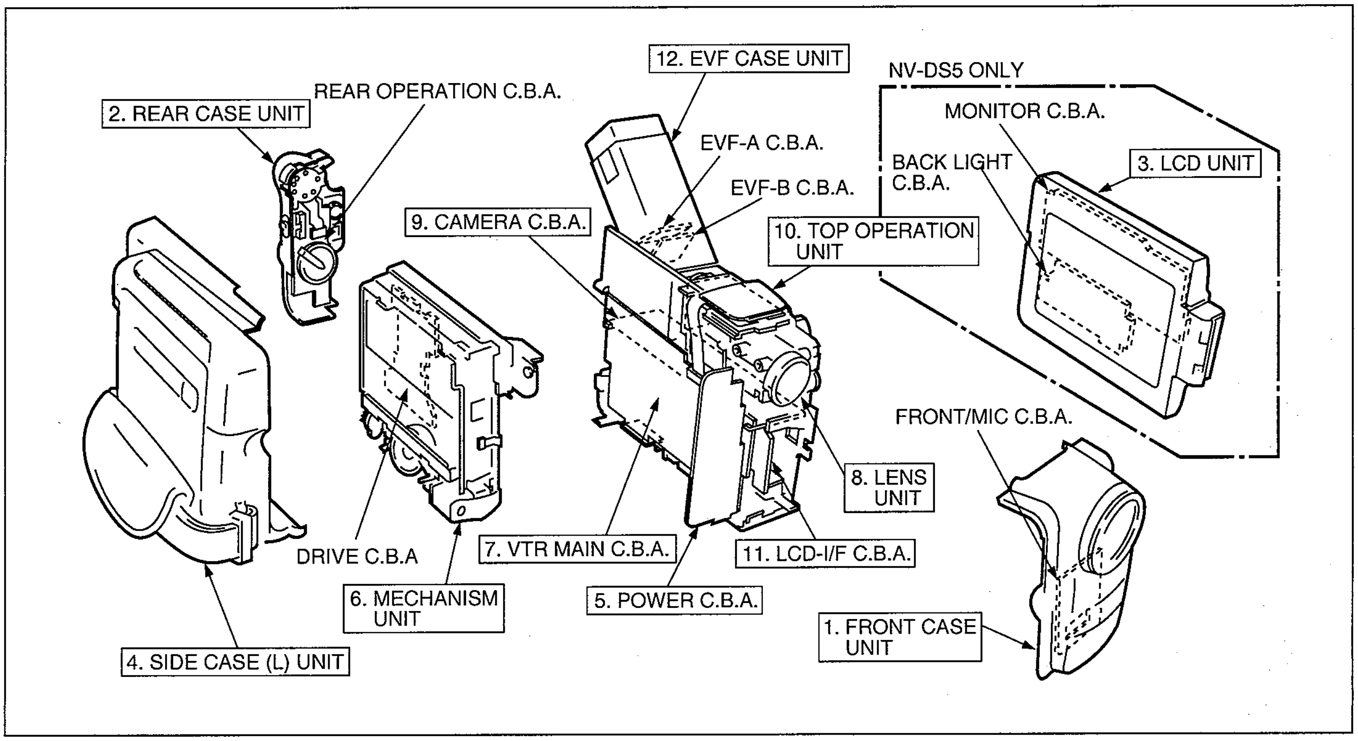
⓱ DV Cable

SECTION 2
ADJUSTMENT PROCEDURES

2-1. DISASSEMBLE FLOW CHART

This flow chart indicates the disassembly steps the cabinet parts, C.B.A. and Mechanism Unit in order to access to items to be serviced. When reinstalling, perform the steps in the reverse order.


1. Front Case Unit
2. Rear Case Unit
NV-DS5
3. LCD Unit
4. Side Case (L) Unit
5. Power C.B.A.
6. Mechanism Unit
7. VTR Main C.B.A.
8. Lens Unit
9. Camera C.B.A.
10. Top Operation Unit
11. LCD I/F C.B.A.
12. EVF Case Unit


12. EVF CASE UNIT
NV-DS5 ONLY
REAR OPERATION C.B.A.
2. REAR CASE UNIT
MONITOR C.B.A.
EVF-A C.B.A.
BACK LIGHT C.B.A.
3. LCD UNIT
EVF-B C.B.A.
9. CAMERA C.B.A.
10. TOP OPERATION UNIT
FRONT/MIC C.B.A.
8. LENS UNIT
DRIVE C.B.A
7. VTR MAIN C.B.A.
11. LCD-I/F C.B.A.
6. MECHANISM UNIT
5. POWER C.B.A.
1. FRONT CASE UNIT
4. SIDE CASE (L) UNIT

2-2. DISASSEMBLY PROCEDURES

Flow-chart Disassembly procedure

No.	ITEM / PART	FIG.	REMOVAL (SCREW)	NOTE
1	FRONT CASE	Fig. 1	3-SCREWS (A) 1-SCREW (B) 2-LOCKING TABS 1-CONNECTOR	NV-DS1
		Fig. 2	3-SCREWS (A)	NV-DS5
		Fig. 3	2-SCREWS (B) 2-LOCKING TABS 1-CONNECTOR	NV-DS5
2	REAR CASE	Fig. 4	2-SCREWS (C) 2-SCREWS (D) 2-SCREWS (E) / (F) 1-CONNECTOR (FP6701)	
3	LCD UNIT	Fig. 5	2-SCREWS (G) 2-CONNECTORS (FP3502, FP3503)	NV-DS5
		Fig. 6	3-SCREWS (H) 2-SCREWS (I)	NV-DS5
4	SIDE CASE (L) UNIT	Fig. 7	3-SCREWS (J) SCREW CAP / 2-SCREWS (K) 2-LOCKING TABS 2-SCREWS (L) 1-SCREW (M)	
		Fig. 8	2-SCREWS (N) / (O)	
5	POWER C.B.A.	Fig. 9	2-SCREWS (P) / (Q) 2-CONNECTORS (FP1001, PP1001)	
6	MECHANISM UNIT	Fig. 10	1-SCREW (R) 2-SCREWS (S) 1-SCREW (T) 2-CONNECTORS (PP2001, FP3201)	
		Fig. 11	2-SCREWS (U)	
7	VTR MAIN C.B.A.	Fig. 12	2-SCREWS (V) 3-CONNECTORS (P3001, PP3002, FP6001)	
8	LENS UNIT	Fig. 12	2-SCREWS (W)	
9	CAMERA C.B.A.	Fig. 13	3-CONNECTORS (PP301, PP302, FP701)	
10	TOP OPERATION UNIT	Fig. 14	2-SCREWS (X) 2-SCREWS (Y) 1-SCREW (Z)	
11	LCD I/F C.B.A.	Fig. 15	2-SCREWS (a) 2-SCREWS (b) 1-SCREW (c)	NV-DS5
12	EVF CASE UNIT	Fig. 16	UNLOCK Unlock Locking Tab with a small driver.	
		Fig. 17	2-SCREWS (d)	

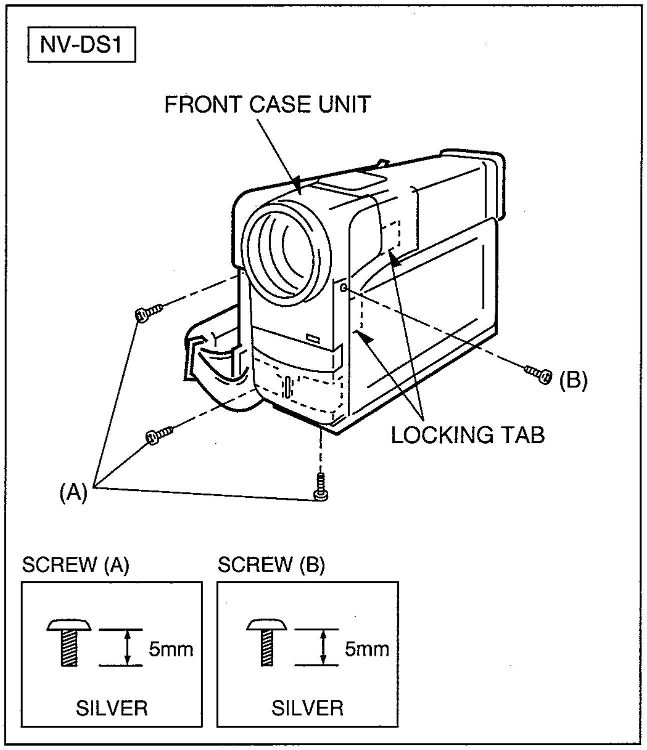

NV-DS1
FRONT CASE UNIT
(B)
LOCKING TAB
(A)
SCREW (A)
SCREW (B)
5mm
SILVER
5mm
SILVER

Fig. 1

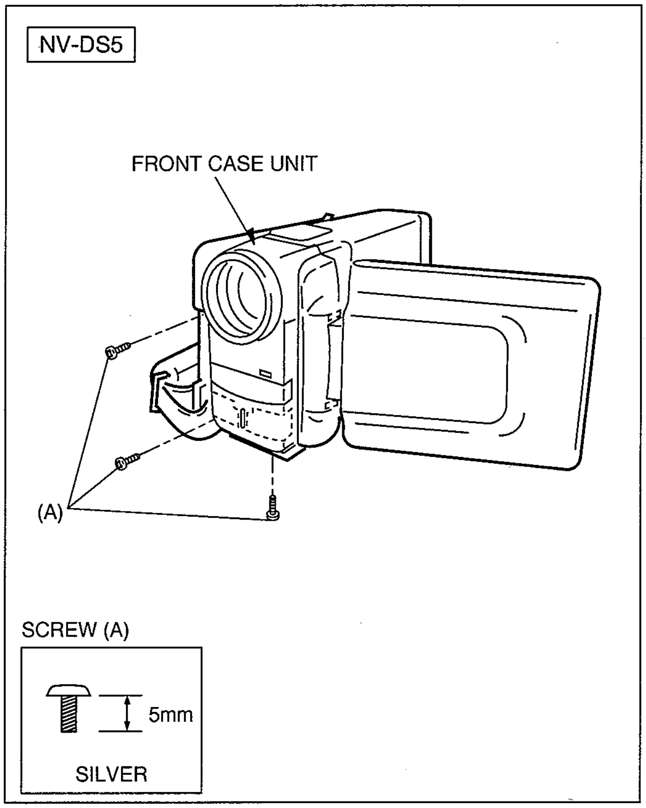

NV-DS5
FRONT CASE UNIT
(A)
SCREW (A)
5mm
SILVER

Fig. 2

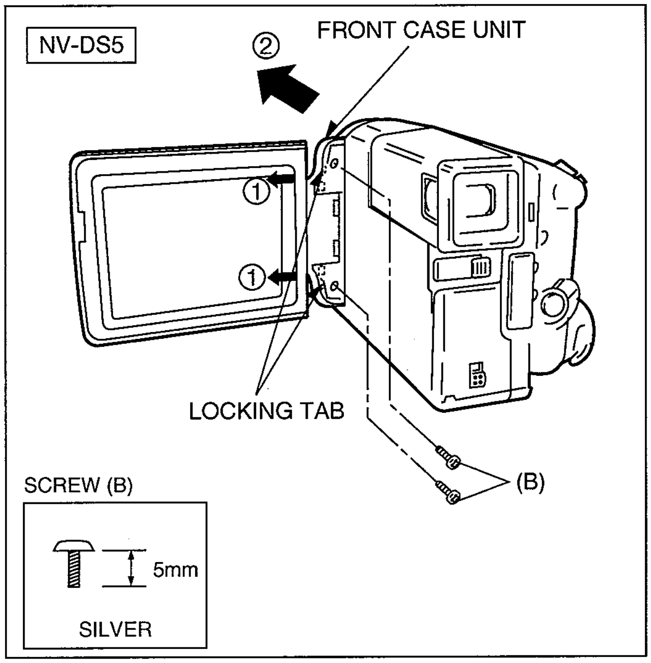

NV-DS5
②
FRONT CASE UNIT
①
①
LOCKING TAB
(B)
SCREW (B)
5mm
SILVER

Fig. 3

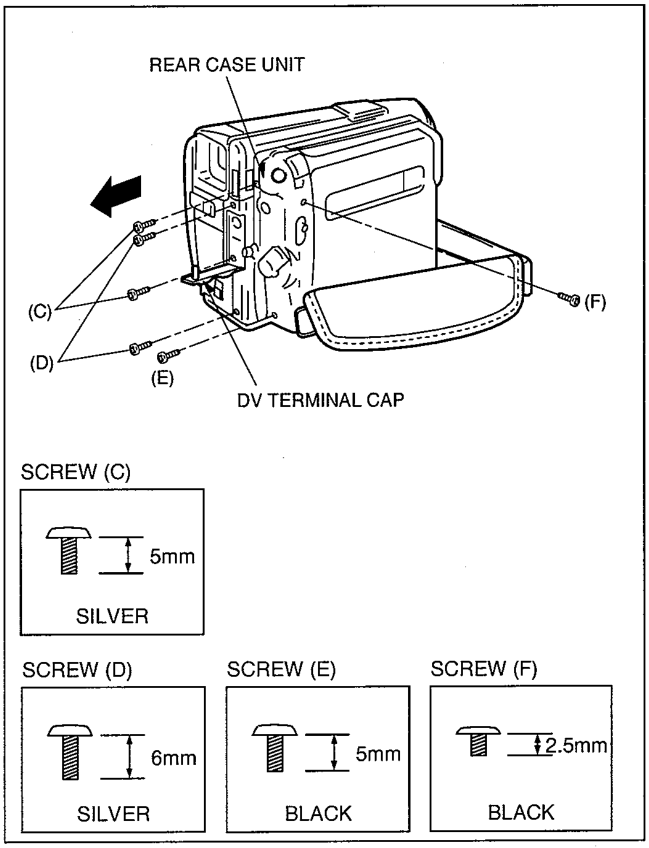

REAR CASE UNIT
(C)
(D)
(E)
(F)
DV TERMINAL CAP
SCREW (C)
5mm
SILVER
SCREW (D)
6mm
SILVER
SCREW (E)
5mm
BLACK
SCREW (F)
2.5mm
BLACK

Fig. 4

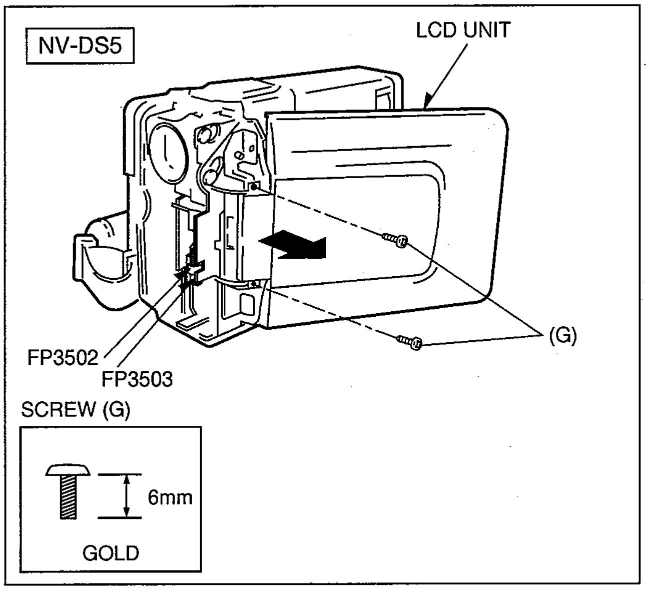

NV-DS5
LCD UNIT
(G)
FP3502
FP3503
SCREW (G)
6mm
GOLD

Fig. 5

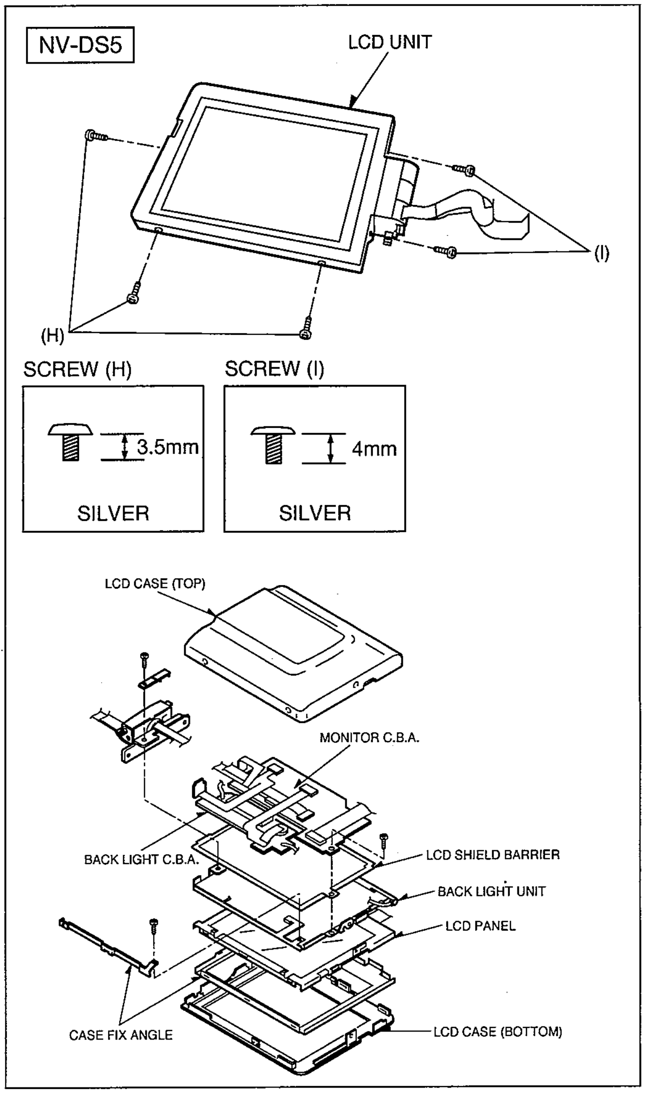

NV-DS5
LCD UNIT
(I)
(H)
SCREW (H)
3.5mm
SILVER
SCREW (I)
4mm
SILVER
LCD CASE (TOP)
MONITOR C.B.A.
BACK LIGHT C.B.A.
LCD SHIELD BARRIER
BACK LIGHT UNIT
LCD PANEL
CASE FIX ANGLE
LCD CASE (BOTTOM)

Fig. 6

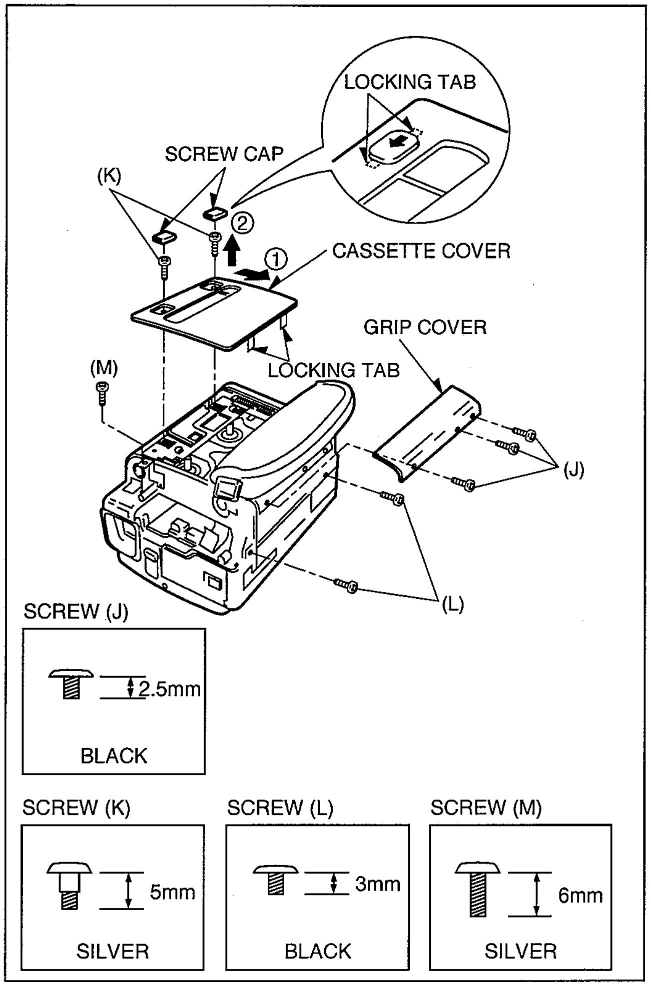

LOCKING TAB
SCREW CAP
(K)
②
①
CASSETTE COVER
GRIP COVER
(M)
LOCKING TAB
(J)
(L)
SCREW (J)
2.5mm
BLACK
SCREW (K)
5mm
SILVER
SCREW (L)
3mm
BLACK
SCREW (M)
6mm
SILVER

Fig. 7

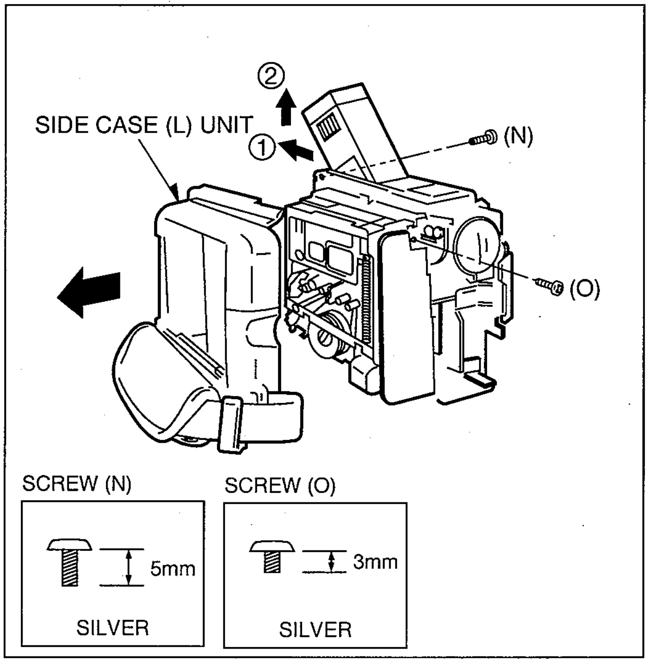

②
SIDE CASE (L) UNIT
①
(N)
(O)
SCREW (N)
5mm
SILVER
SCREW (O)
3mm
SILVER

Fig. 8

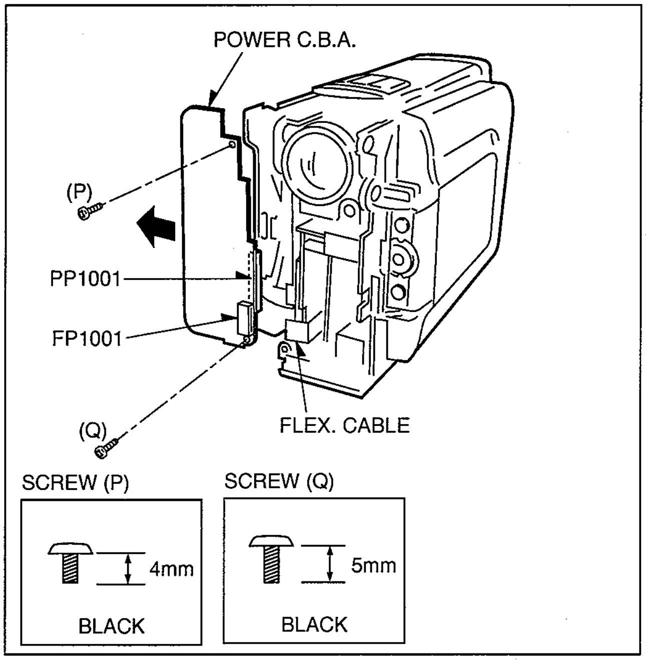

POWER C.B.A.
(P)
PP1001
FP1001
(Q)
FLEX. CABLE
SCREW (P)
4mm
BLACK
SCREW (Q)
5mm
BLACK

Fig. 9

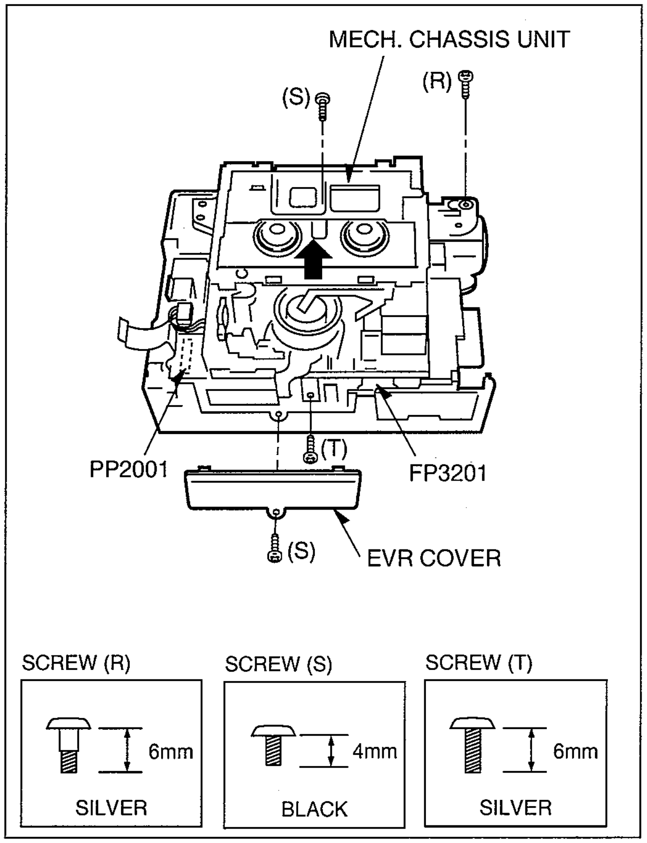

MECH. CHASSIS UNIT
(S)
(R)
(T)
PP2001
FP3201
(S)
EVR COVER
SCREW (R)
6mm
SILVER
SCREW (S)
4mm
BLACK
SCREW (T)
6mm
SILVER

Fig. 10

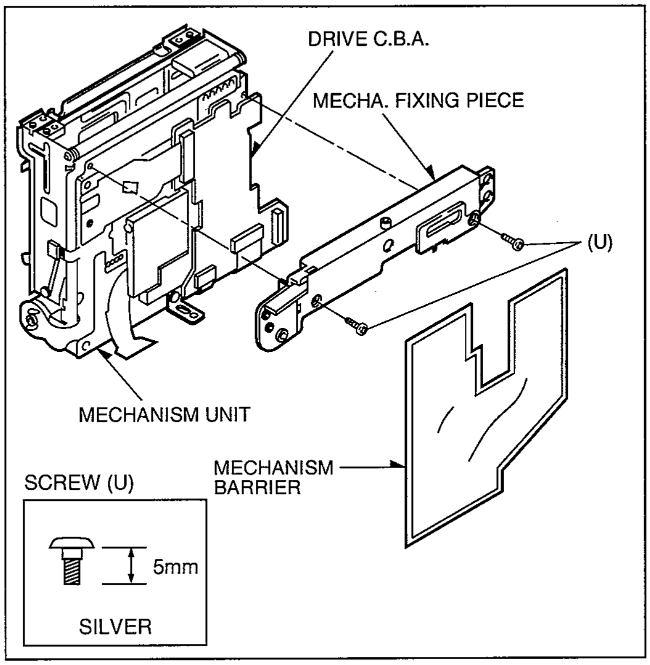

DRIVE C.B.A.
MECHA. FIXING PIECE
(U)
MECHANISM UNIT
MECHANISM BARRIER
SCREW (U)
5mm
SILVER

Fig. 11

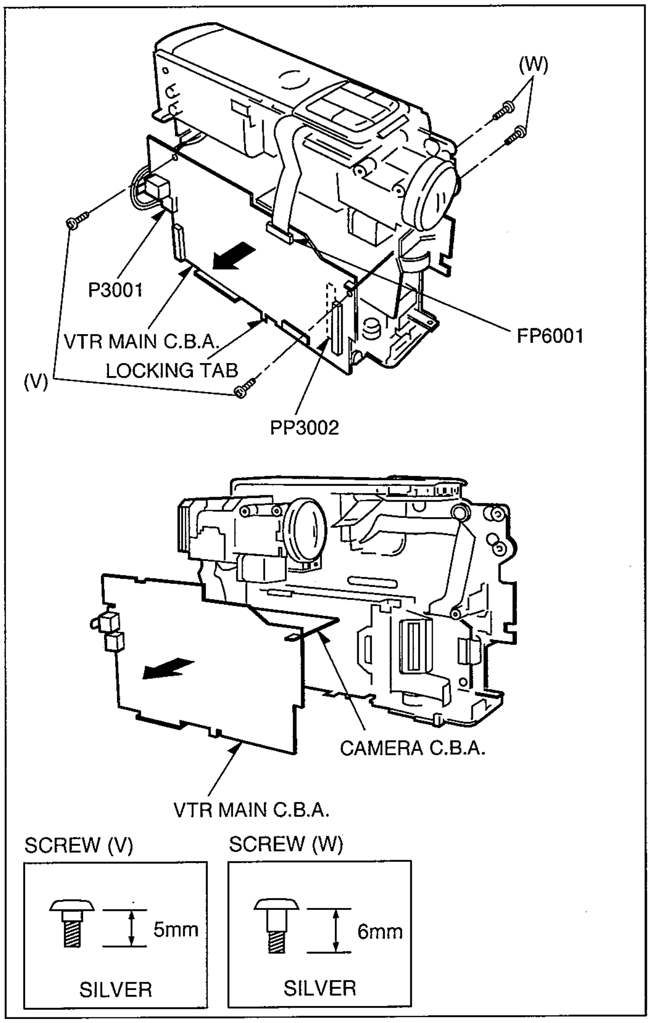

(W)
P3001
VTR MAIN C.B.A.
LOCKING TAB
(V)
PP3002
FP6001
CAMERA C.B.A.
VTR MAIN C.B.A.
SCREW (V)
5mm
SILVER
SCREW (W)
6mm
SILVER

Fig. 12

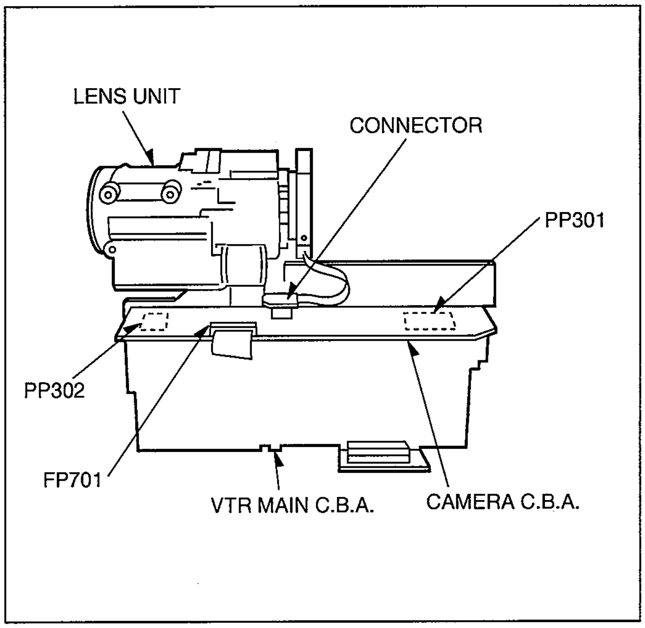

LENS UNIT
CONNECTOR
PP301
PP302
FP701
VTR MAIN C.B.A.
CAMERA C.B.A.

Fig. 13

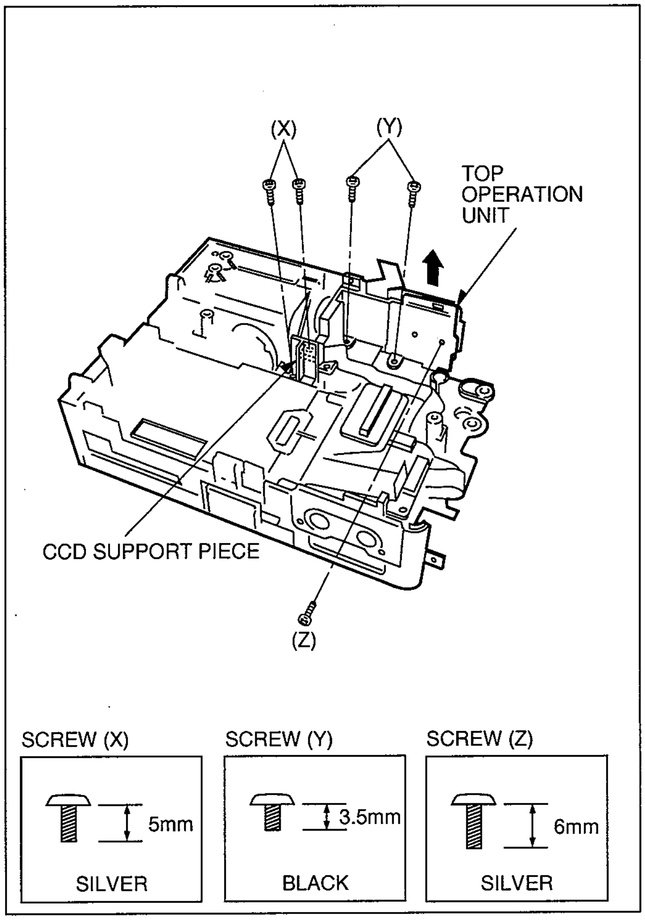

(X)
(Y)
TOP OPERATION UNIT
CCD SUPPORT PIECE
(Z)
SCREW (X)
5mm
SILVER
SCREW (Y)
3.5mm
BLACK
SCREW (Z)
6mm
SILVER

Fig. 14

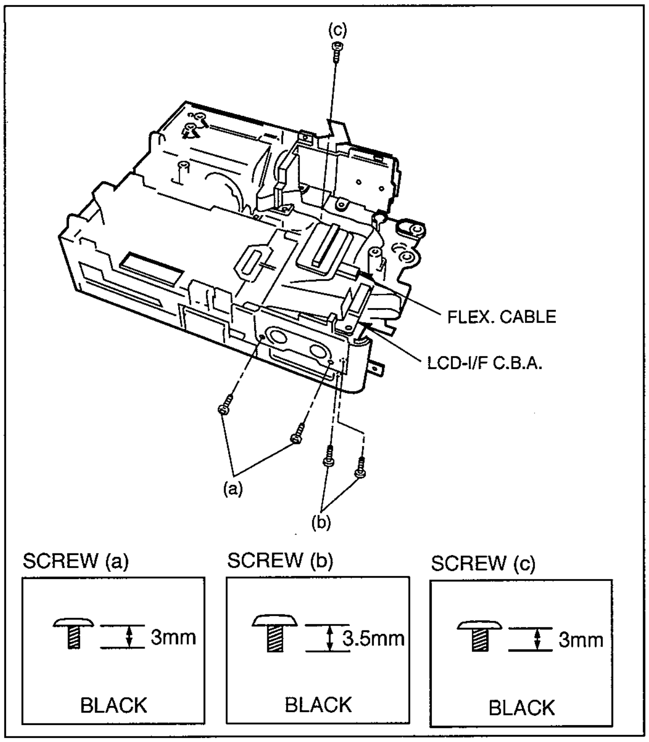

(c)
FLEX. CABLE
LCD-I/F C.B.A.
(a)
(b)
SCREW (a)
3mm
BLACK
SCREW (b)
3.5mm
BLACK
SCREW (c)
3mm
BLACK

Fig. 15

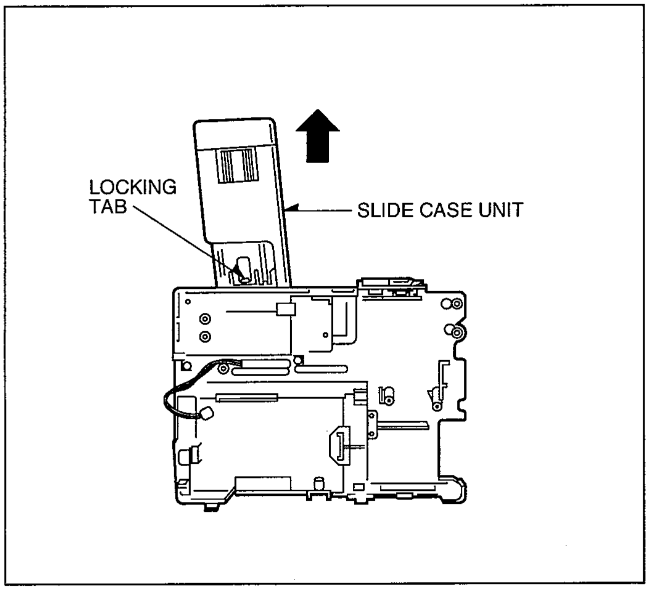

LOCKING TAB
SLIDE CASE UNIT

Fig. 16

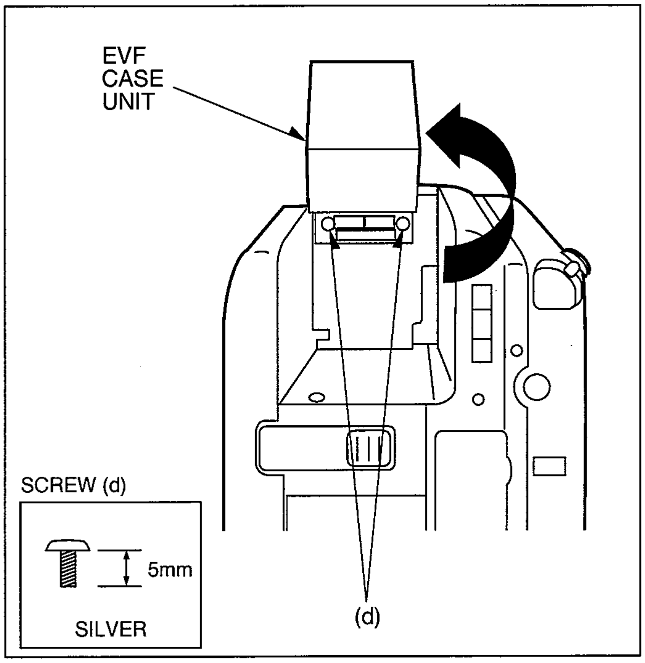

EVF CASE UNIT
SCREW (d)
5mm
SILVER
(d)

Fig. 17

Memo

SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. ABBREVIATIONS

INITIAL/LOGO		ABBREVIATIONS	INITIAL/LOGO		ABBREVIATIONS
A	A.TR	Auto Tracking		ATN	Absolute Track Number
	AB0-4, AB12-15	Address Bus Line 0-4, 12-15		ATR OFF (H)	Auto Tracking Off (H)
	ABSF	Focus Encoder Input		ATV	Advanced TV
	ACI	Analog Channel Cording IC		AUDIO (N)	Audio (Normal)
	AD	Auto Date, Analogue Digital Converter		AUX	Auxiliary
	AD0-6, ADR0-6	Address Data Line		AVDD	Analogue VDD
	ADCLK	Analogue Digital Converter Clock		AVSS	Analogue Ground
	ADCNT	Analogue Digital Control		AWTB	Auto White Balance B-Y
	ADCS	Analogue Digital Chip Select		AWTR	Auto White Balance R-Y
	A-DET	Audio Detect			
	ADREC	Audio Delaied Rec	B	B/G OFF	AWT B-Offset Voltage
	ADUB	Audio Dubbing		BACK	Back-up
	AE	Auto Expose		BACK UP	Microcomputer Back-up
	AECNT	Auto Expose Control		BACK VDD	Back-up Power
	AEE (H)	Audio E-E (H)		BATT	Battery
	AEH	Audio Erase Head		BATT ALARM	Battery Alarm
	AEIRQ	Auto Expose Interrupt Request		BATT REF	Reference Voltage for Battery
	AF/MF	Auto Focus/Manual Focus		BCB	B Carrier Balance
	AF DIS CS	AF DIS Chip Select		BCBM (B-Y)	B-Y Carrier Balance
	AFADE	Audio Fade		BCBM (R-Y)	R-Y Carrier Balance
	A-FADE (L)	Audio Fade (L)		BD 0-7	Bus Data
	AFCS	Auto Focus Chip Select		BDCK	Standerd Bus Data Clock (9MHz)
	AF-VN	Zoom Encoder V-Ref (−)		BDEN	Standerd Bus Data Enable
	AF-VP	Zoom Encoder V-Ref (+)		BF	Burst Flag
	AGC	Automatic Gain Control		BFA	Burst Flug for Encoder
	AGCCNT	Automatic Gain Control Control		BFO/BFI	Burst Flug Input/Output
	AGND	Analogue Ground/Audio Ground		BI, BO	Buffer Input, Output
	AGS	Anti Ground Shooting		BL	Back Light
	AH (P) / (R)	Audio Head (Play) / (Record)		BL ON	Back Light ON (L)
	AHASW	Audio Head Amp Switch Pulse		BL4V	Back Light 4V
	AHSW	Audio Head Switch Pulse		BLC 0, 1	Back Light Y Control Out, In
	AI, AO	Buffer Input, Output		BLDI/O	Back Light Drive Input/Output
	AIBCK	Bit Clock (to A/D Converter)		BLK	Blanking Pulse
	AIDAT	Serial data (to A/D Converter)		BLKA	Blanking for Encoder
	AILRCK	L/R Clock (to A/D Converter)		BLKI/O	Blanking Pulse In/Out
	AIMCK	Master Clock (to A/D Converter)		BLKZ	Blanking Pulse for Zoom
	ALC CNT	Auto Level Control Control		BM	Balance Modulator
	ALC MAIN	Auto Level Control Drive		BQUIET	Bus Data Quite
	A-LOCK	Full Auto Switch		B-Y KB	B-Y Carrier Balance
	AMUT	Audio Mute		B-YO	B-Y Signal Out
	A-MUT (H)	Audio Mute (H)			
	ANLPTH	Analogue Loop Through High	C	C A In/Out	Pre-Aperture In/Out
	AORP	Audio Overlap Pulse		C CNT	Colour Control
	APCNT	Aperture Control		C SYNC	Composite Sync Signal
	APS	Auto Power Save		C/N	Carrier/Noise
	ART VH	Artifical Vertical Sync		C0-7, C00-07	Chrominance Signal 0-7
	AT CNT	Automatic Tracking Gain Adjust		CAGAIN	Aperture Gain Control
	ATF	Automatic Track Finding		CAM	Camera
	ATFCLK	41.85MHz		CAM CLK	Camera Clock
	ATL	Auto Lock Select		CAM RST	Camera Reset

	INITIAL/LOGO	ABBREVIATIONS
	CAM SIOC	Camera Serial In/Out Control
	CAM T	Camera Test
	CAM TL	Capstan Trque Limit
	CAP EC	Capstan Trque Control
	CAP P (H)	Capstan Power On (H)
	CAP R/F/S	Capstan Revers (H) /Stop (M) /Forward (L)
	CAP SW	Capstan Power Control Switch
	CAPSTP H	Capstan Stop Flag (Stop High)
	CAPVM	Capstan Motor Current
	CAPVS	Capstan Motor Power Control Switch
	CAS	Compresion, Audio Process, Shuffling/Deshuffling
	CAS	Memory Address Strobe (Active Low)
	CASDOWN, DWN	Cassette Down (L)
	CBLK	Composite Blanking Pulse
	CC	Channel Cording
	CCA	Current Control Amp
	CCD	Charge Coupled Devise
	CCW	Counterclockwise
	CD SP0-7	Digital Chrominance 0-7
	CDS	Correlate Double Sampling Signal
	CDS OUT	CCD Output Signal
	CDS1,2	Sampling Pulse for CCD Output signal
	CE	Control Pulse Erase
	CEC	Capstan Error Code
	C-ERA (H)	Control Erase (H)
	CFEM	Chrominance Memory Signal
	CFM	Chrominance Field Memory
	CG CLK	Character Generator Clock
	CG DATA	Character Generator Data
	CGC	Chrominance Gain Control
	CH	Charge
	CH1	Channel 1 (Odd Field)
	CHR	Character
	CHR BACK	Character Back-up
	CHR MIX	Character Mix
	CI, CO	Buffer In/Out
	CIF, CIR	Positive Control Pulse, Negative Control Pulse
	CK	Clock
	CL/CLK	Clock
	CLASS	Classeffication Signal for Compress (DCT/VLC)
	CLK135	13.5 MHz System Clock
	CLK18	18 MHz System Clock
	CLK2	Clock 2 (824XFH : 12.875 MHz)
	CLK27	27 MHz System Clock
	CLX, CLX1-4	Shift Clock for X Direction (LCD Panel)
	CLY	Shift Clock for Y Direction (LCD Panel)
	CLY FG	Cylinder FG Signal
	CMEM0-3	Chrominance Memory 0-3
	CMIX	Character Mix
	CMO	Chrominance Memory Output
	CMODE	Camera Mode
	CNCLK	Clock
	CNR	Chrominance Noise Reduction
	CNT, CONT	Control

	INITIAL/LOGO	ABBREVIATIONS
	CO	Control Out
	CO0-7	Chrominance Output 0 to 7 (Digital)
	COM	Common
	COMB	Comb Filter
	COS EQ	Cosine Equalizer
	CP	Clamp Pulse
	CP ON (H)	Camera Power On (H)
	CP2, 20	Clamp Pulse
	CPN	Component Signal
	CPOB	Clamp Pulse for Optical Blanking
	CPS	Composite Signal
	CR OUT	Pre-Aperture Out
	CR POW SW	Camera Remote Power On Switch
	CRA	Aperture Gain Control
	CRST	Camera Reset
	CS	Chip Select
	CS 0-7	Chrominance Signal Out 0-7
	CSEL	Clock Phase Select
	CSI 0-7	Chrominance Signal In 0-7
	CTSW	Crosstalk Switch
	CURR	Current
	CW	Clockwise
	CYL EC	Cylinder Motor Trque Control
	CYL PG	Cylinder Motor PG
	CYL VM	Cylinder Motor Current or Power
D	D CLK	Digital Clock
	D MODE	Digital Mode Switch Signal
	D01-03	Zoom 01-03
	DAC	Digital Analogue Converter
	DAG	Digital Analogue Ground
	DB0-7	Data 0-7
	DCC	DC Clamp Control
	DCCNT	DC Control
	DCI	Digital Channel Cording IC
	DCLR	Digital Clear
	DCP	Digital Clamp Pulse
	DCT	Discrete Cosine Transform (Compression)
	DCX7	Serial Data
	DEDP 0-3	Playback Data
	DEDR 0-3	Rec Data
	DEMP	De-Emphasis
	DFD0-7	Encode Input/Output Signal for Shuffling Memory
	DIBDCK	Bit Clock
	DICLK	Digital Clock
	DIDAT	Serial Data
	DILRCK	L/R Clock
	DIMCK	Master Clock
	DIOS	Select Signal for Digital In/Out
	DIS	Digital Image Stabilizer
	DIS R/B	Digital Image Stabilizer Read (H) /Busy (L)
	DIS/KAND	Digital Image Stabilizer/Sensitivity
	DISCS	Dis Chip Select
	DISP	Display

INITIAL/LOGO		ABBREVIATIONS
	DL	Delay Line
	DOBCK	Bit Clock (to D/A Converter)
	DOCTL.	Data Output Control
	DODAT	Serial Data (to D/A Converter)
	DOLRCK	L/R Clock (to D/A Converter)
	DOMCK	Master Clock (to D/A Converter)
	DQ 1-16	Memory Data
	DRK	Dark (LPF Switch for Auto Focus)
	DS	Double Sampling Pulse
	DS1, 2	Double Sampling Pulse
	DSF 0-7	Input/Output Data to Shuffling Memory (18 MHz)
	DSP	Digital Signal Processor
	DSV	Digital Sum Variation
	DV	Digital Video
	DVB	Digital Video Broadcast
	DVC	Digital Video Cassette
	DVDD	Digital VDD
	DVIO	Digital Video Input Output
	DVSS	Digital Ground
	DX	Shift Data for X Direction (for LCD)
	DY	Shift Data for Y Direction (for LCD)
	DZ	Digital Zoom
E	E Snap	Electric Snap Shot
	E ZM	Electric Zoom
	E2P	EEPROM
	EARP	Earphone
	EC	Error Control
	EC	Torque Control
	ECC	Error Correction Cording
	ECM	Electric Condenser Mic
	ECR	Reference Voltage for Capstan Torque
	EDA	Error Correction, DCI, ATF Servo
	EE CS	EEPROM Chip Select
	EE R/B	EEPROM Read (H) /Busy (L)
	EEPROM	Electric Erasable Programable Read Only Memory
	EIS	Electric Image Stabilizer (DIS)
	ENV	Enverope
	EOB	End Of Block
	EQ	Equalizer
	EVF	Electric View Finder
	EXT DC	External DC (AC Adaptor)
	EXT DC (H)	AC Adaptor DC (H)
	EXT NOREG	AC Adaptor 6V
	EXT S DATA	Serial Data for Edit
	EXT SCK	Serial Clock for Edit
	EZOOM	Electric Zoom
F	F	Far (Focus)
	F ENC	Lens F-Value
	FACT MODE	Factry Mode (not used in the service)
	FB	Feed Back
	FC	Saw Tooth Signal In
	FCK	Clock
	FCO	Saw Tooth Signal Generator
	FENC	Focus Encoder
	FEND	Frame End Pulse
	FH2B	FH/2 (15.625 KHz/2 = 7.8125 KHz)
	FIX OSD	Auto Tracking Off (H)
	FM	Field Memory
	FM0-7	Field Memory 0 - 7
	FMCI0-3	Field Memory Chrominance In 0-3
	FMCO0-3	Field Memory Chrominance Out 0-4
	FMDIR	Focus Motor Direction
	FMOEM	Field Memory Enable
	FMOEO	Field Memory Enable
	FMT1-4	Focus Motor Terminal 1-4
	FMY00-07	Field Memory Luminance Out 0-7
	FMYI0-07	Field Memory Luminance In 0-7
	FNO	F Value
	FPS	Frame Refference Signal
	FR	Capstan Reverse High
	FRP	Frame Refference Pulse
	FRP	Frame Start Pulse
	FRPSO	Frame Start Pulse
G	G1,G2,G3	Gap 1, 2 and 3
	GCA	Gain Control AMP
	GCNT	Gain Control
	G-CNT	AGC Adjustment
	GCTRL	Gain Control
	GENE	Generator
	GF	FG AMP Terminal
	GSW	Ground for Switching Power
H	H/M/N	Hi-Fi/Mix/Normal
	H/N	Hi-Fi/Normal
	H1,2	H. CCD Drive Pulse
	HAP	Horizontal Aperture
	HASW	Head AMP Switching Pulse
	HB	Hall Bias
	HBR SET	High Brightness Set
	HBRST	High Brightness Set
	HCLR	High Clear
	HCP	Shift Clock for Horizontal Drive
	HD	Horizontal Drive Pulse
	HDTV	High Definition TV
	HEX	Hexadecimal
	HG	Hall Gain
	HID	Head Switching Pulse
	HLT	High Bright Signal
	HOLE IN (+) , (–)	Input Signal from Hall IC
	HP	Headphone
	HPF	High Pass Filter
	HSE	Modulated Data Output
	HSS	Horizontal Sinc Signal
	HSW	Head Switching Pulse
	HS-WT	High Speed Zoom

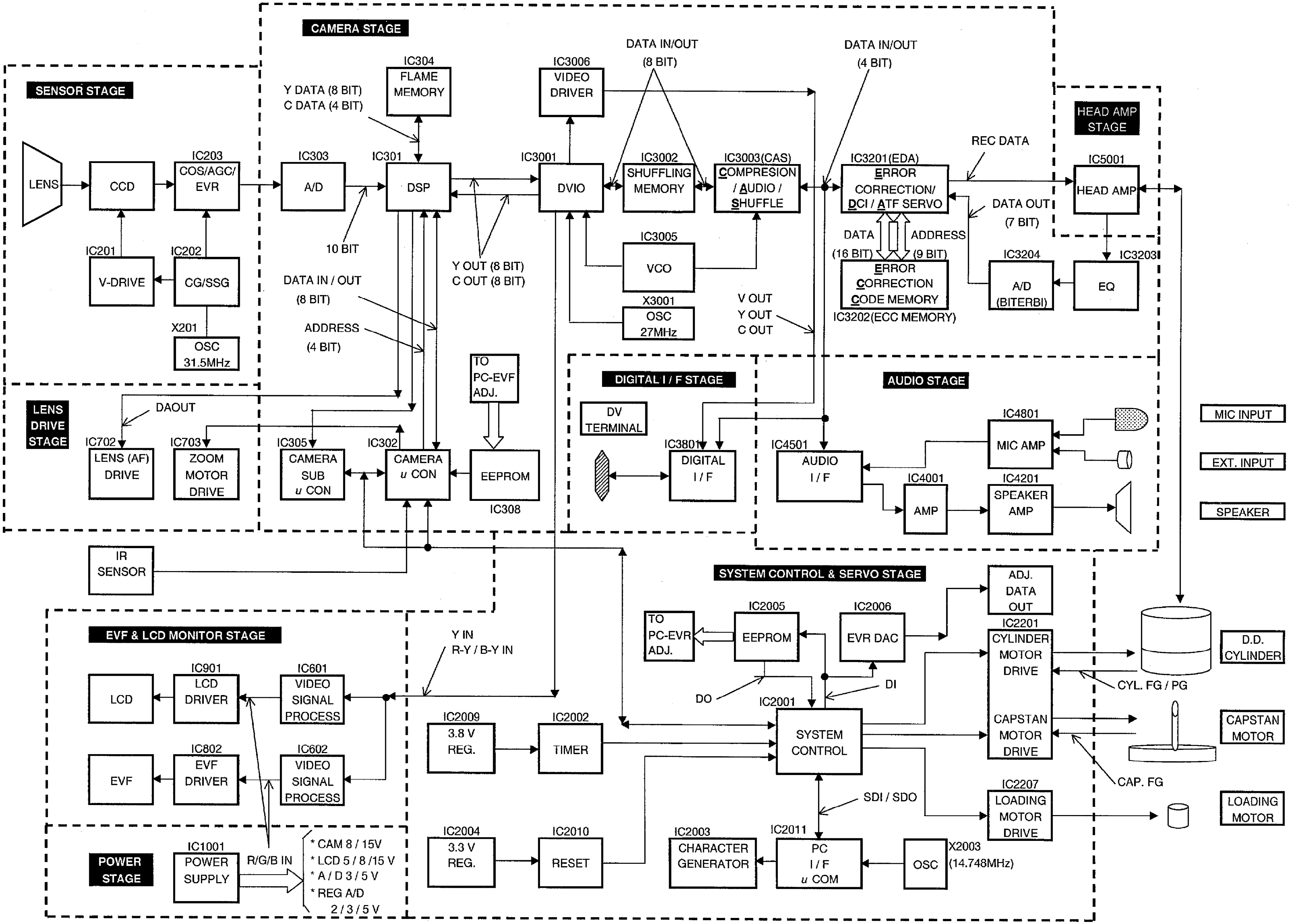
INITIAL/LOGO		ABBREVIATIONS
	HSZ	High Speed Zoom
I	I/F	Interface
	I-2 C	Inter Integrated Circuit
	ID (H)	Wide Television (H)
	IMP	Inter Microprocessor Protocol
	INF	Input Frame Signal
	INF	CCD Input Signal 1
	INS	CCD Input Signal 2
	INTER	Interval Recording
	INV	Inverter
	IOU	R-Y Analogue Signal Output
	IOV	B-Y Analogue Signal Output
	IOY	Y Analogue Signal Output
	IR	Infrared Rays
	IRDET	Infrared Rays Detection
	IREF	Current Adjustment Terminal
	IRIS/SH	Iris/Shutter Control
	IRQ	Interrupt Request
	ITI	Insert & Track Information
J	JPEG	Joint Photographoc Image Cording Experts Group
K	KANDO	Digital Gain Up
	KB	Carrier Balance
	KEY IN	Key Scan
	KND	Digital Gain Up
	KNEE	Luminance Compensate
L	LCD	Liquid Crystal Display
	LCD P (L)	LCD Power On (L)
	LD	Load Pulse
	LDD	Liquid Direct Drive
	LEDCNT	LED Control
	LI-BATT	Lithium Battery
	LOAD	Loading
	LOAD F, R	Loading Direction (F:Forward/R:Reverse)
	LPF	Low Pass Filter
	LRMONO	Monoral Audio (L + R)
	LSB	Least Significant Bit
	LVL	LPF Switch for Auto Focus
M	MA0-5	Microprocessor Address Data 0-5
	M1-3	Motor Coil Terminal 1 to 3
	Mbps	Megahertz Bit Per Second
	MD	Modulation
	MD0-7	Microprocessor Data 0-7
	MDT0-7	Microprocessor Data 0-7
	ME (TAPE)	Metal Evaporated (Tape)
	MENB	Focus Motor Enable
	MFF	Manual Focus Far
	MFN	Manual Focus Near
	MHSYNC	Monitor Horizontal Sync Signal
	MIC	Memory In Cassette
	MIG	Metal In Gap
	MIX N.R.D.	Non Rec Data Mix
	MOD	Modulation
	MOUT	Mic Out
	MP (TAPE)	Metal Particle (Tape)
	MPEG	Moving Picture Image Cording Experts Group
	MPEG2	Moving Picture Image Cording Experts Group Phase 2
	MRST	Focus Motor Reset
	MSB	Most Signal Bit
	MVSYNC	Monitor Vertical Sync Signal
N	N	Near (Focus)
	N/F	Near/Far Focus
	N/P	NTSC/PAL
	NB1-3	Base for NPN Transistor
	NC	No Connection
	NC1-3	Corrector of NPN Transistor
	NCLR	Power On Reset
	NCP1	Clamp Pulse
	NCP2+VDH	Clamp Pulse + Horizontal Drive Pulse
	NCP2+VDM	Clamp Pulse + Gate Pulse
	NDE	Non Liner De-Emphasis
	NE	Emitor of NPN Transistor
	NLE	Non Liner Emphasis
	NR	Noise Reduction
	NRD	Non Rec Data
	NRD BLK	Non Rec Data Blanking
	NRD CLK	No Rec Data Clock
	NRE	Read Enable Input (Low Active)
	NWE	Write Enable (Low Active)
O	OB	Optical Black
	OBCNT	Optical Black Control
	OBREF	Reference Voltage for Optical Black Control
	OE	Output Enable
	OFH	Horizontal Counted Down Clock Signal (Reference)
	OFS	Offset
	OP	Operation AMP Output
	OSD	ON Screen Display
	OVL	Overlap Pulse
	OZ	Optical Zoom
P	PB1-3	PNP Base 1-3
	P SW	Power Switch
	PBCTL	Play Back Control
	PBCTL	Pre-Branking Control
	PBH	Head Amp Switch
	PBLK	Pre-Blanking (Pulse)
	PC1-3	Corrector of PNP Transistor
	PCBM	Carrier Balance
	PCH	Phase Compensator (Hall AMP)
	PCI	Phase Compensator (Current)
	PCO	Phase Compensator Out
	PCS	Switching Power Control

INITIAL/LOGO		ABBREVIATIONS
	PCV	Phase Compensator (Voltage)
	PE	Emitter of PNP Transistor
	PED	Pedestal
	PEDECNT	Pedestal Control
	PENO	Alarm (L)
	PFP	Pilot Frame Position
	PGA, B	Power Ground A, B
	PGC	Pulse Generator Comparator
	PGI	Pulse Generator Input
	PGMM	Pulse Generator Monostable Multivibrator
	PGO	Output of Pulse Generator AMP
	PMODE	Select Signal for Normal/Wide Screen
	PON	Power On
	POR	Power On Reset
	POSCOM	Common Position
	PREAMP	Pre-AMP
	PREBLK	Pre-Blanking
	PT	Protect for V Voltage
	PWM	Pulse Width Modulation
	PWMB	Pulse Width Modulation Pulse
Q	Q2H	Source Output Select
R	R CTL P	Recorded Control Pulse (+)
	R CTL R	Recorded Control Pulse (-)
	R/B	Read/Busy
	R/L	Direction Control for Data Transmition
	RA	Recording AMP
	RA1	Rec AMP 1
	RAC AC	Rec Audio Current
	RAD	Read Address Data
	RAE	Read Address Enable
	RB	Read Busy
	R-B	R Bias
	RCB	R Carrier Balance
	RE	Read Enable
	RE (F) , (S)	Rotary Erase Head Transformer
	REB	R Bias
	REC CC	Rec Current Control
	REC CCNT	Rec Current Control
	RECCTRL	Recording Control Pulse
	RECI	Rec Amp Switch
	RENCF	Lens Control (Forward)
	RENCR	Lens Control (Reverse)
	RERASE	Rotary Erase Head
	RGBIV1-2	1V Inverted Signal 1-2
	RGO R/G OFF	Offset Voltage For AWT R
	RSF	Capstan Direction (Reverse/Stop/Forward)
	RST	Reset
	RSTB	R Strobe
	RSTPWD	Reset Power Down Input
	RSTR	Reset Read
	RSTW	Reset Write
	RT	Saw Tooth Terminal

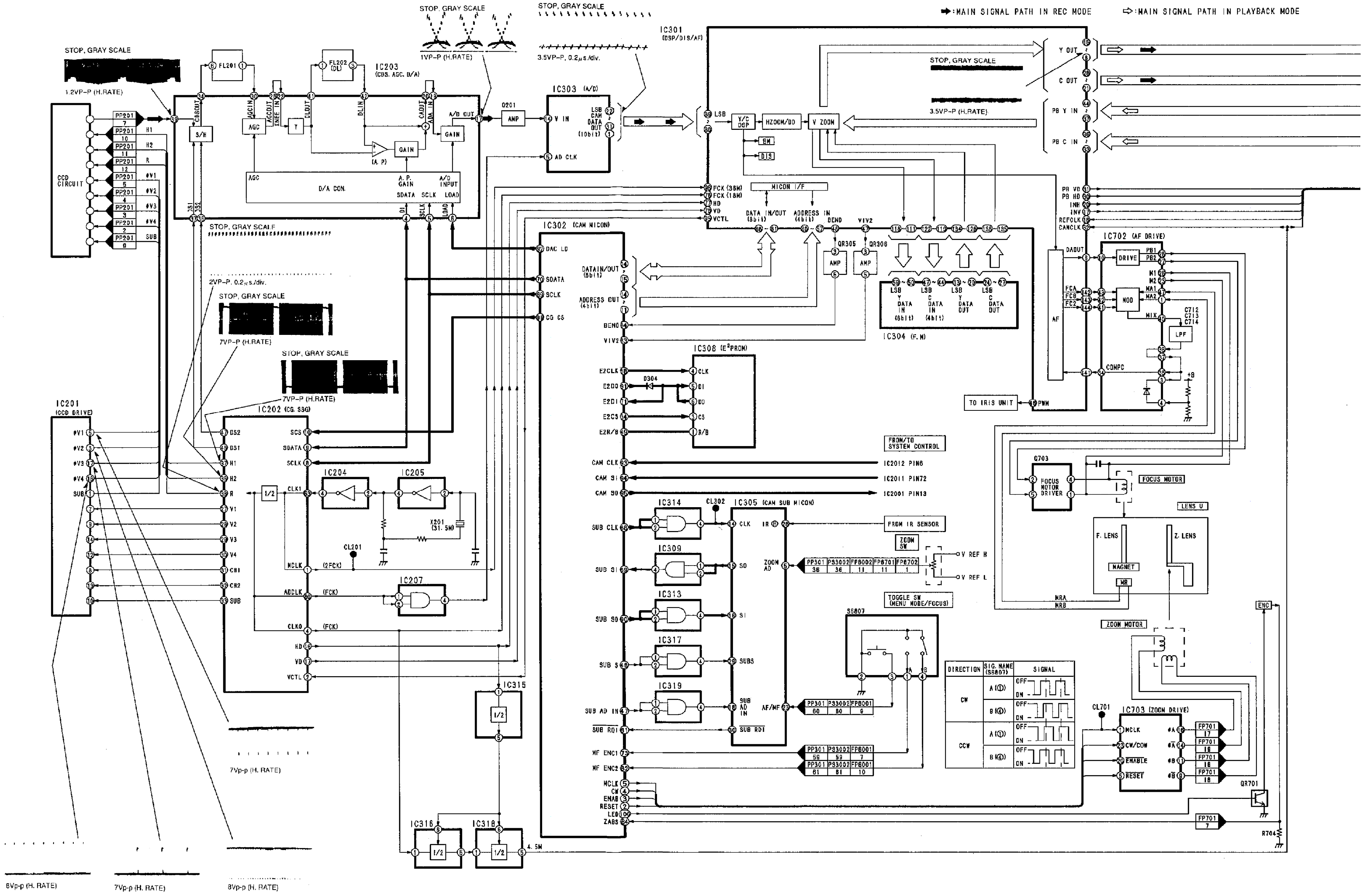
INITIAL/LOGO		ABBREVIATIONS
	RVCO	Resister for Oscillation
	RW	Read Write
	RWAE	Read Write Enable
	R-YKB	R-Y Carrier Balance
S	S PHOT	Supply Photo Transistor
	S/H	Sampling Hold
	S/S	Start/Stop
	SBD	Serial Data
	SBI	Serial Data Input
	SBO	Serial Data Output
	SBT	Serial Clock
	SCAN0-5	Key Scan 0-5
	SCK	Serial Clock
	SCR	Search
	SCR, S.C.R	Still Cue Review
	SEG.	Segment
	SET	White Balance Set
	SH/IRIS	Shutter/Iris Control
	SHIFT	Capasitor for Phase Shift
	SI	Serial Data Input
	SIOC	Serial In/Out Control
	SNAP	Snap Shot
	SNS LED	Sensor LED
	SO	Serial Data Output
	SPA	ATF Sampling Pulse
	SPEN	8 Bit Shift Register Enable
	SPK	Speaker
	SPO	Reset for Switching Power
	SPST	8 Bit Shift Register Strobe
	SREELP	Supply Reel Pulse
	SRT	Start
	SSA	Start Sync block Area
	SSW	Select Signal for Low Pass Filter
	ST5V	Safety Tab 5V
	STAB	Safety Tab Switch
	STB	Stand by Signal
	STB	Strobe
	SWB	Switching Pre-Drive Pulse
	SYL EC	Cylinder Torque Control
	SYL FG	Cylinder FG
T	T	Tele (Zoom)
	T PHOT	Take-up Photo Transistor
	TBC	Time Base Conntrol
	TFT	Thim Film Transistor
	TH	Thermostat for Battery
	TI	Test Mode Select
	TL	Torque Limit
	TM	Sub Code
	TMD	Sub Code Data
	TRE	Tracking Error Signal
	TREEL (P)	Take-up Reel (Pulse)
	TRFIX	Tracking Fix

INITIAL/LOGO		ABBREVIATIONS
	TRIWAVE	Tracking Wave
	TRP	Tracking Position
	TRP	Trap
	TSR	Head Switching Refference
	TST	Time Scale Transfer
U	U/V SEL	R-Y/B-Y Select Signal
	UNLOAD	Un-Loading
	UNRE	Microprocessor Read Enable
	UNWE	Microprocessor Write Enable
	UV	R-Y/B-Y
	UV SEL	R-Y/B-Y Select Signal
V	V1-V4	V.CCD Drive Pulse
	VB	VH Filter Switching
	VCE	Power Terminal
	VCNTL	Video Control
	VCO	Voltage Control Oscillator
	VCP	Shift Clock Output for Vertical Drive
	VCTLD	Video Control
	VCTRL	Voltage Charge Control
	VD	Vertical Drive Pulse
	VDDX	X Drive Power for Colour LCD
	VDDXY	XY Drive Power for Colour LCD
	VDDY	Y Drive Power for Colour LCD
	VDREC	Video Delayed Rec
	Vgg	Voltage for Gate IC
	Vgl	Gate off Voltage
	VID	Video Signal Out
	VIN	Video In
	VITC	Vertical Interval Time Code
	VITERBI	One of Signal Detection Method
	VL	Low Voltage
	VLC	Variable Length Cording
	VLOCKP	Artificial Sync Pulse
	VLP	Artificial Sync Pulse
	VM	Motor Voltage
	VMD	Velocity Mode Data
	VMD1-3	Electric Shutter Mode
	VMODE	NTSC/PAL Select Switch
	VMVH	VH Filter Switching
	VORP	Video Overlap
	VRB	Voltage Refference Bottom
	VRBS	Voltage Refference Bottom Output
	VREF1R3V	Refference Voltage 1.3V
	VREF3R3V	Refference Voltage 3.3V
	VREFH	Refference Voltage High Side
	VREFL	Refference Voltage Low Side
	VRI	Refference Voltage Input
	VRO	Refference Voltage Output
	VRT	Voltage Refference Top
	VRTS	Voltage Refference Top Output
	VS	Switching Comparator
	VSS	Vertical Sync Signal
	VSSX	X Driver Power for Colour LCD
	VSSXY	X-Y Driver Power for Colour LCD
W	W	Wide (Zoom)
	W/N	Mode Select for Window Mode
	W/N	Wide/Normal
	WAD	Write Address Enable
	WAE	Write Address Enable
	WAERAE	Write Address Enable
	WARI	Interrupt
	WB	White Balance
	WE	Write Enable
	WEM	Memory Write Enable
	WHD	Wide Horizontal Drive Pulse
	WIDE A	Wide Zoom
	WSB	B AGC Control
	WSR	R AGC Control
	WTV	Wide TV
X	XP	FG Logic Reset
Y	Y FM0-7	Y Field Memory 0-7
	YCE	Cylinder Error Code
	YGC	Y Gain Control
	YMO 0-7	Y Field Memory 0-7
	YNCST	Noize Canceller
	YNR	Luminance Noise Reduction
	YSDP 0-7	Digital Y Out 0-7
Z	Z.ENC	Zoom Encoder
	Z.MIC	Zoom Mic
	ZENC	Zoom Encoder Output
	ZMDIR	Zoom Drive
	ZMEN	Zoom Enable
	ZMT	Zoom Motor Tele Side
	ZMT (+)/(−)	Zoom Motor (+)/(−)
	ZMTER	Zoom Motor Tele Side
	ZMW	Zoom Motor Wide Side
	ZSW	Zoom Switch

3-2. OVERALL BLOCK DIAGRAM

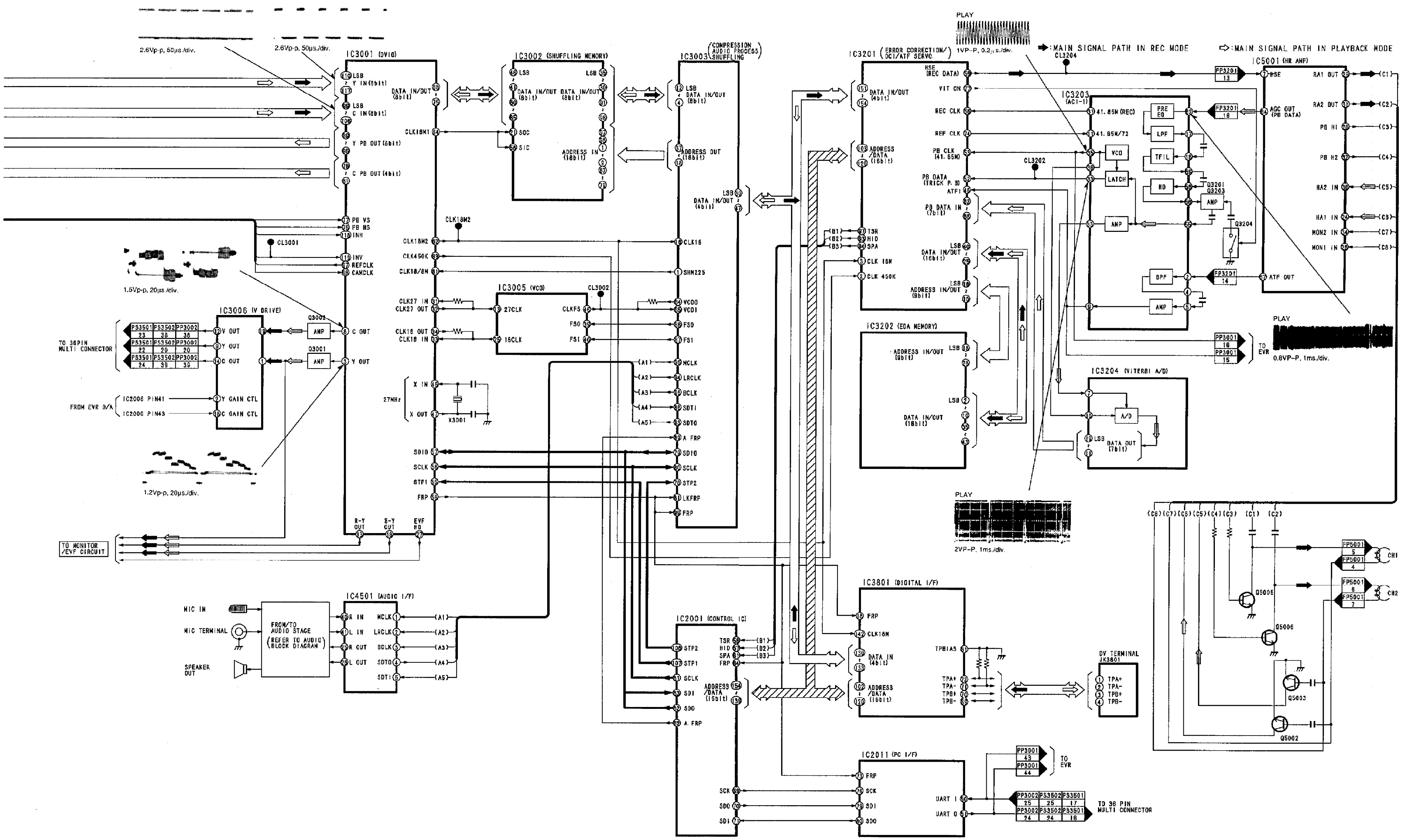

CAMERA STAGE
SENSOR STAGE
LENS
CCD
IC203
COS/AGC/
EVR
IC201
V-DRIVE
IC202
CG/SSG
X201
OSC
31.5MHz
Y DATA (8 BIT)
C DATA (4 BIT)
IC304
FLAME
MEMORY
IC303
A/D
IC301
DSP
10 BIT
DATA IN / OUT
(8 BIT)
ADDRESS
(4 BIT)
Y OUT (8 BIT)
C OUT (8 BIT)
IC3006
VIDEO
DRIVER
IC3001
DVIO
DATA IN/OUT
(8 BIT)
IC3002
SHUFFLING
MEMORY
IC3003(CAS)
COMPRESION
/ AUDIO /
SHUFFLE
IC3005
VCO
X3001
OSC
27MHz
V OUT
Y OUT
C OUT
DATA IN/OUT
(4 BIT)
IC3201(EDA)
ERROR
CORRECTION/
DCI / ATF SERVO
DATA
(16 BIT)
ADDRESS
(9 BIT)
ERROR
CORRECTION
CODE MEMORY
IC3202(ECC MEMORY)
REC DATA
DATA OUT
(7 BIT)
HEAD AMP
STAGE
IC5001
HEAD AMP
IC3204
A/D
(BITERBI)
IC3203
EQ
LENS
DRIVE
STAGE
DAOUT
IC702
LENS (AF)
DRIVE
IC703
ZOOM
MOTOR
DRIVE
IC305
CAMERA
SUB
u CON
IC302
CAMERA
u CON
TO
PC-EVF
ADJ.
EEPROM
IC308
DIGITAL I / F STAGE
DV
TERMINAL
IC3801
DIGITAL
I / F
AUDIO STAGE
IC4501
AUDIO
I / F
IC4801
MIC AMP
IC4001
AMP
IC4201
SPEAKER
AMP
MIC INPUT
EXT. INPUT
SPEAKER
IR
SENSOR
SYSTEM CONTROL & SERVO STAGE
TO
PC-EVR
ADJ.
IC2005
EEPROM
IC2006
EVR DAC
ADJ.
DATA
OUT
IC2201
CYLINDER
MOTOR
DRIVE
CAPSTAN
MOTOR
DRIVE
D.D.
CYLINDER
CYL. FG / PG
CAPSTAN
MOTOR
CAP. FG
DO
DI
IC2001
SYSTEM
CONTROL
IC2207
LOADING
MOTOR
DRIVE
LOADING
MOTOR
SDI / SDO
IC2009
3.8 V
REG.
IC2002
TIMER
IC2004
3.3 V
REG.
IC2010
RESET
IC2003
CHARACTER
GENERATOR
IC2011
PC
I / F
u COM
OSC
X2003
(14.748MHz)
EVF & LCD MONITOR STAGE
Y IN
R-Y / B-Y IN
LCD
IC901
LCD
DRIVER
IC601
VIDEO
SIGNAL
PROCESS
EVF
IC802
EVF
DRIVER
IC602
VIDEO
SIGNAL
PROCESS
POWER
STAGE
IC1001
POWER
SUPPLY
R/G/B IN
* CAM 8 / 15V
* LCD 5 / 8 /15 V
* A / D 3 / 5 V
* REG A/D
2 / 3 / 5 V

3-3. CAMERA & VIDEO BLOCK DIAGRAM

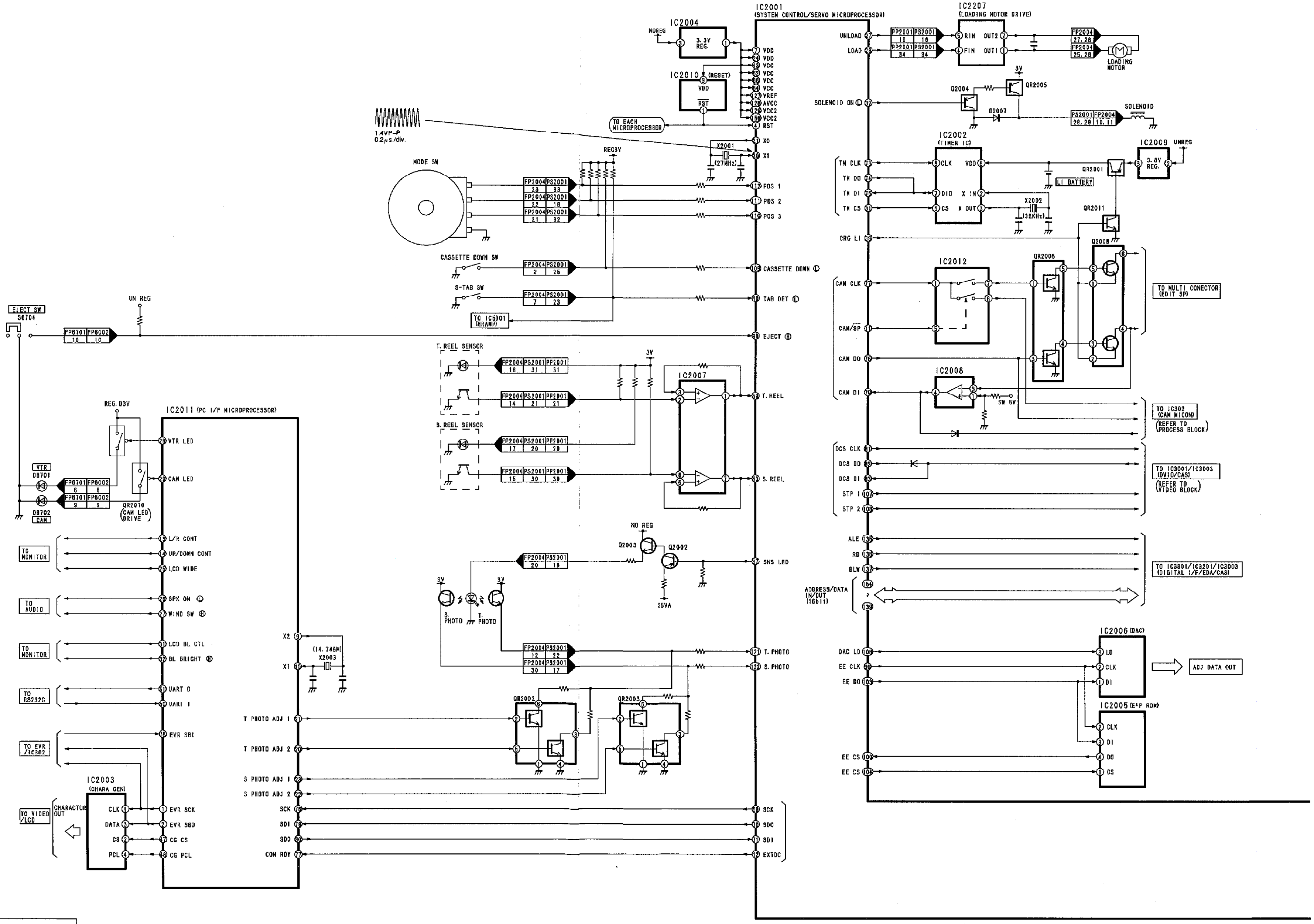

➡:MAIN SIGNAL PATH IN REC MODE
⇨:MAIN SIGNAL PATH IN PLAYBACK MODE
STOP, GRAY SCALE
1.2VP-P (H.RATE)
1VP-P (H.RATE)
3.5VP-P, 0.2μs/div.
3.5VP-P (H.RATE)
2VP-P, 0.2μs/div.
7VP-P (H.RATE)
8Vp-p (H. RATE)
7Vp-p (H. RATE)
CCD CIRCUIT
PP201
FL201
FL202 (DL)
IC203 (CDS. AGC. D/A)
S/H
AGC
GAIN
D/A CON.
Q201
AMP
IC303 (A/D)
V IN
AD CLK
IC301 (DSP/DIS/AF)
Y/C DSP
HZOOM/DD
V ZOOM
EM
DIS
MICON I/F
Y OUT
C OUT
PB Y IN
PB C IN
IC302 (CAM MICON)
DAC LD
SDATA
SCLK
CG CS
DATA IN/OUT (8bit)
ADDRESS OUT (4bit)
BEND
V1V2
IC304 (F.M)
IC308 (E²PROM)
D304
IC201 (CCD DRIVE)
IC202 (CG. SSG)
IC204
IC205
X201 (31. 5M)
CL201
IC207
IC315
IC316
IC318
IC314
IC309
IC313
IC317
IC319
CL302
IC305 (CAM SUB MICON)
FROM/TO SYSTEM CONTROL
IC2012 PIN6
IC2011 PIN72
IC2001 PIN13
FROM IR SENSOR
ZOOM SW
V REF H
V REF L
TOGGLE SW (MENU MODE/FOCUS)
S6807
QR305
QR306
AMP
IC702 (AF DRIVE)
DRIVE
MOD
LPF
C712
C713
C714
TO IRIS UNIT
PWM
Q703
FOCUS MOTOR DRIVER
FOCUS MOTOR
LENS U
F. LENS
Z. LENS
MAGNET
MR
MRA
MRB
ZOOM MOTOR
ENC
CL701
IC703 (ZOOM DRIVE)
FP701
QR701
R704
4.5M

DIRECTION	SIG. NAME (S6807)	SIGNAL
CW	A(③)	OFF / ON
	B(④)	OFF / ON
CCW	A(③)	OFF / ON
	B(④)	OFF / ON

Back Page:
OVERALL Section


2.6Vp-p, 50μs./div.
2.6Vp-p, 50μs./div.
1.5Vp-p, 20μs./div.
1.2Vp-p, 20μs./div.
PLAY
1VP-P, 0.2μs./div.
PLAY
0.8VP-P, 1ms./div.
PLAY
2VP-P, 1ms./div.
➡:MAIN SIGNAL PATH IN REC MODE
⇨:MAIN SIGNAL PATH IN PLAYBACK MODE
IC3001 (DVIO)
LSB Y IN(8bit)
LSB C IN(8bit)
Y PB OUT(8bit)
C PB OUT(4bit)
DATA IN/OUT (8bit)
CLK18M1
PB VS
PB HS
INH
INV
REFCLK
CAMCLK
CL3001
CLK18M2
CLK450K
CLK18/8M
CLK27 IN
CLK27 OUT
CLK18 OUT
CLK18 IN
X IN
X OUT
27MHz
X3001
C OUT
Y OUT
SDIO
SCLK
STP1
FRP
R-Y OUT
B-Y OUT
EVF HD
TO MONITOR /EVF CIRCUIT
IC3006 (V DRIVE)
V OUT
Y OUT
C OUT
Y GAIN CTL
C GAIN CTL
Q3002
Q3001
AMP
PS3501 PS3502 PP3002
23 38 38
22 20 20
24 39 39
TO 38PIN MULTI CONNECTOR
FROM EVR D/A
IC2006 PIN41
IC2006 PIN43
IC3002 (SHUFFLING MEMORY)
LSB
DATA IN/OUT (8bit)
SOC
SIC
ADDRESS IN (18bit)
IC3005 (VCO)
27CLK
18CLK
CLKFS
FS0
FS1
CL3002
IC3003 (COMPRESSION AUDIO PROCESS SHUFFLING)
LSB DATA IN/OUT (8bit)
ADDRESS OUT (16bit)
DATA IN/OUT (4bit)
CLK18
SHN225
VCO0
VCO1
FS0
FS1
MCLK
LRCLK
BCLK
SDTI
SDTO
A FRP
SDIO
SCLK
STP2
LKFRP
FRP
(A1) (A2) (A3) (A4) (A5)
IC4501 (AUDIO I/F)
R IN
L IN
R OUT
L OUT
MCLK
LRCLK
BCLK
SDTO
SDTI
MIC IN
MIC TERMINAL
SPEAKER OUT
FROM/TO AUDIO STAGE (REFER TO AUDIO BLOCK DIAGRAM)
IC2001 (CONTROL IC)
STP2
STP1
SCLK
SDI
SDO
A FRP
TSR
HID
SPA
FRP
ADDRESS /DATA (16bit)
SCK
SDO
SDI
(B1) (B2) (B3)
IC3201 (ERROR CORRECTION/ DCI/ATF SERVO)
DATA IN/OUT (4bit)
ADDRESS /DATA (16bit)
TSR
HID
SPA
CLK 18M
CLK 450K
HSE (REC DATA)
VIT ON
REC CLK
REF CLK
PB CLK (41.85M)
PB DATA (TRICK P. B)
ATFI
PB DATA IN (7bit)
LSB DATA IN/OUT (16bit)
LSB ADDRESS IN/OUT (9bit)
CL3204
CL3202
IC3202 (EDA MEMORY)
ADDRESS IN/OUT (9bit)
DATA IN/OUT (16bit)
LSB
IC3203 (ACI-1)
41.85M(REC)
41.85M/72
VCO
LATCH
AMP
PRE EQ
LPF
TFIL
HD
BPF
Q3201 Q3203
Q3204
IC3204 (VITERBI A/D)
A/D
LSB DATA OUT (7bit)
FP3201 13
FP3201 18
FP3201 14
PP3001 16
PP3001 15
TO EVR
IC5001 (HR AMP)
HSE
AGC OUT (PB DATA)
ATF OUT
RA1 OUT
RA2 OUT
PB H1
PB H2
HA2 IN
HA1 IN
MON2 IN
MON1 IN
(C1) (C2) (C3) (C4) (C5) (C6) (C7) (C8)
FP5001 5
FP5001 4
FP5001 8
FP5001 7
CH1
CH2
Q5005
Q5006
Q5003
Q5002
IC3801 (DIGITAL I/F)
FRP
CLK18M
DATA IN (4bit)
ADDRESS /DATA (16bit)
TPBIAS
TPA+
TPA-
TPB+
TPB-
DV TERMINAL JK3801
TPA+
TPA-
TPB+
TPB-
IC2011 (PC I/F)
FRP
SCK
SDI
SDO
UART I
UART O
PP3001 43
PP3001 44
TO EVR
PP3002 PS3502 PS3501
25 25 17
24 24 16
TO 38 PIN MULTI CONNECTOR

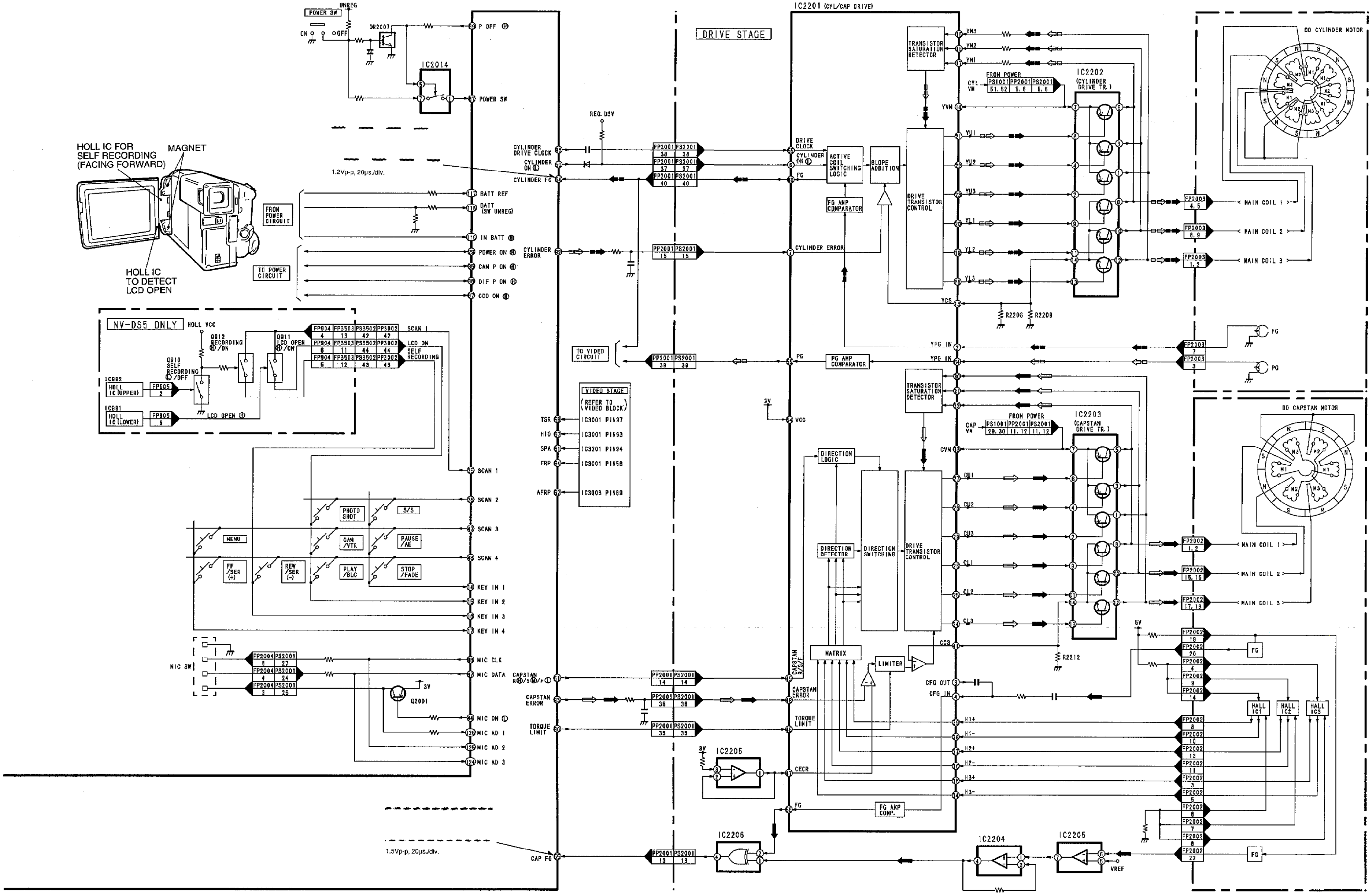
3-4. SYSTEM CONTROL & SERVO BLOCK DIAGRAM



IC2001 (SYSTEM CONTROL/SERVO MICROPROCESSOR)
IC2004
3.3V REG.
NOREG
IC2010 (RESET)
VDD
RST
TO EACH MICROPROCESSOR
VDD
VDD
VCC
VCC
VCC
VCC
VREF
AVCC
VCC2
VCC2
RST
X0
X1
X2001 (27MHz)
1.4VP-P 0.2μs/div.
MODE SW
REG3V
FP2004 PS2001
POS 1
POS 2
POS 3
CASSETTE DOWN SW
S-TAB SW
CASSETTE DOWN
TAB DET
TO IC5001 (HRAMP)
EJECT SW S6704
UN REG
FP6701 FP6002
EJECT
T. REEL SENSOR
S. REEL SENSOR
IC2007
3V
T. REEL
S. REEL
NO REG
Q2003
Q2002
SNS LED
55VA
S. PHOTO
T. PHOTO
T. PHOTO
S. PHOTO
QR2002
QR2003
REG. D3V
IC2011 (PC I/F MICROPROCESSOR)
VTR LED
CAM LED
VTR D8701
D8702 CAM
QR2010 (CAM LED DRIVE)
TO MONITOR
L/R CONT
UP/DOWN CONT
LCD WIDE
TO AUDIO
SPK ON
WIND SW
TO MONITOR
LCD BL CTL
BL BRIGHT
TO RS232C
UART O
UART I
TO EVR /IC302
EVR SBI
IC2003 (CHARA GEN)
TO VIDEO /LCD
CHARACTOR OUT
CLK
DATA
CS
PCL
EVR SCK
EVR SBO
CG CS
CG PCL
X2
X1
(14.748M) X2003
T PHOTO ADJ 1
T PHOTO ADJ 2
S PHOTO ADJ 1
S PHOTO ADJ 2
SCK
SDI
SDO
COM RDY
SCK
SDO
SDI
EXTDC
IC2207 (LOADING MOTOR DRIVE)
UNLOAD
LOAD
PP2001 PS2001
RIN OUT2
FIN OUT1
FP2034
LOADING MOTOR
SOLENOID ON
Q2004
QR2005
D2007
SOLENOID
PS2001 FP2004
IC2002 (TIMER IC)
TM CLK
TM DO
TM DI
TM CS
CLK VDD
DIO X IN
CS X OUT
X2002 (32KHz)
IC2009 3.0V REG.
UNREG
QR2001
LI BATTERY
QR2011
CRG LI
IC2012
QR2006
Q2008
CAM CLK
CAM/SP
CAM DO
CAM DI
IC2008
SW 5V
TO MULTI CONECTOR (EDIT SP)
TO IC302 (CAM MICON) (REFER TO PROCESS BLOCK)
DCS CLK
DCS DO
DCS DI
STP 1
STP 2
TO IC3001/IC3003 (DVIO/CAS) (REFER TO VIDEO BLOCK)
ALE
RD
BLW
ADDRESS/DATA IN/OUT (16bit)
TO IC3601/IC3201/IC3003 (DIGITAL I/F/EDA/CAS)
IC2006 (DAC)
DAC LD
EE CLK
EE DO
LD
CLK
DI
ADJ DATA OUT
IC2005 (E²P ROM)
CLK
DI
DO
CS
EE CS
EE CS

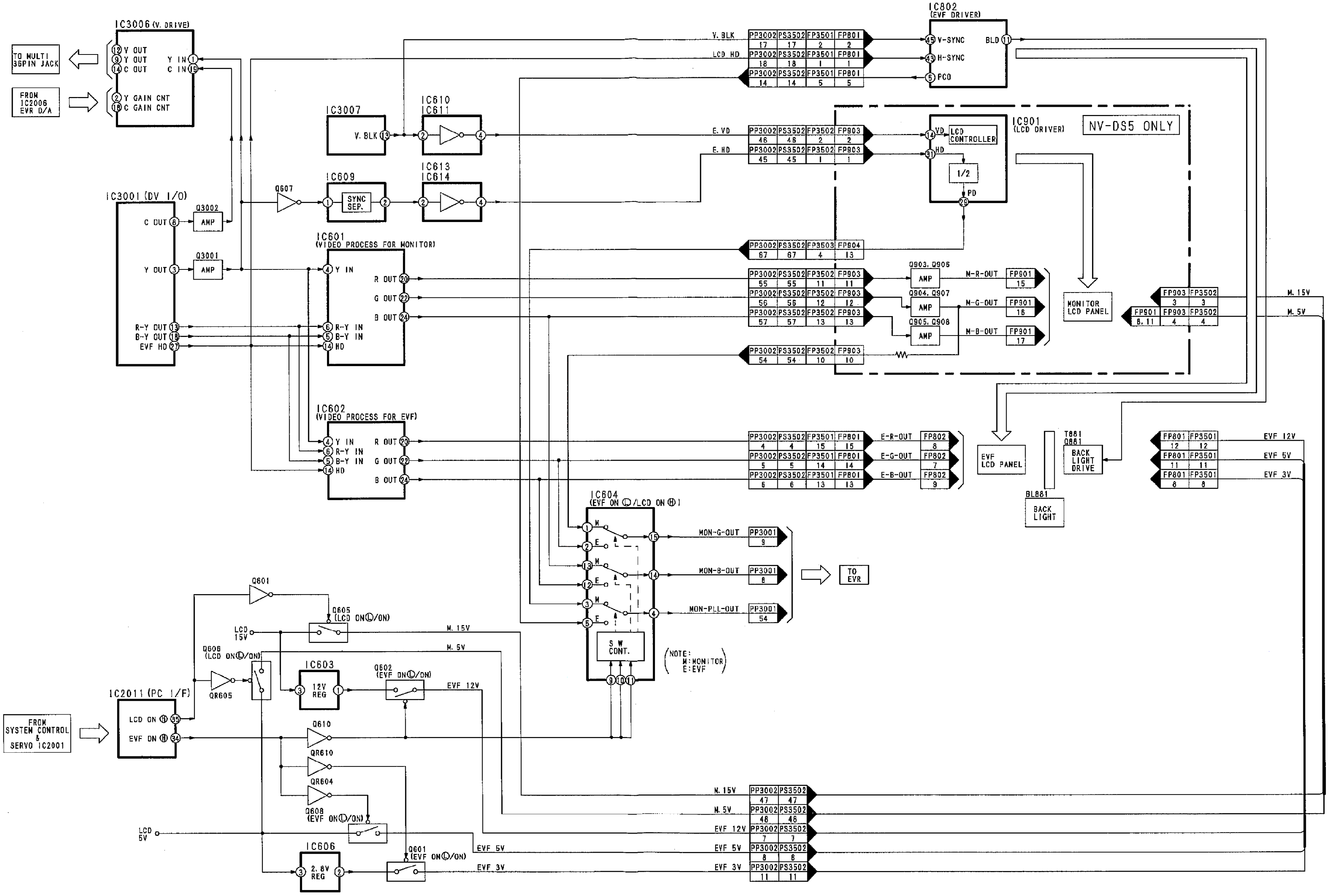
Back Page:
CAMERA & VIDEO Section

➡ :CAPSTAN SERVO SPEED LOOP ⇨ :CAPSTAN SERVO PHASE LOOP ➡ :CYLINDER SERVO SPEED LOOP ⇨ :CYLINDER SERVO PHASE LOOP



POWER SW
UNREG
ON
OFF
QR2007
IC2014
P OFF
POWER SW
HOLL IC FOR SELF RECORDING (FACING FORWARD)
MAGNET
HOLL IC TO DETECT LCD OPEN
REG. D3V
1.2Vp-p, 20µs./div.
CYLINDER DRIVE CLOCK
CYLINDER ON
CYLINDER FG
FROM POWER CIRCUIT
BATT REF
BATT (SW UNREG)
IN BATT
TO POWER CIRCUIT
POWER ON
CAM P ON
DIF P ON
CCD ON
CYLINDER ERROR
NV-DS5 ONLY
HOLL VCC
Q912 RECORDING /ON
Q911 LCD OPEN /ON
Q910 SELF RECORDING /OFF
IC982 HOLL IC (UPPER)
IC981 HOLL IC (LOWER)
FP905
LCD OPEN
SCAN 1
LCD ON
SELF RECORDING
FP904
FP3503
PS3502
PP3002
TO VIDEO CIRCUIT
VIDEO STAGE
(REFER TO VIDEO BLOCK)
TSR
IC3001 PIN97
HID
IC3001 PIN93
SPA
IC3201 PIN94
FRP
IC3001 PIN58
AFRP
IC3003 PIN69
SCAN 1
SCAN 2
SCAN 3
SCAN 4
KEY IN 1
KEY IN 2
KEY IN 3
KEY IN 4
PHOTO SHOT
S/S
MENU
CAM /VTR
PAUSE /AE
FF /SER (+)
REW /SER (−)
PLAY /BLC
STOP /FADE
MIC SW
FP2004
PS2001
MIC CLK
MIC DATA
Q2001
3V
MIC ON
MIC AD 1
MIC AD 2
MIC AD 3
CAPSTAN R/S/F
CAPSTAN ERROR
TORQUE LIMIT
1.5Vp-p, 20µs./div.
CAP FG
DRIVE STAGE
PP2001
PS2001
IC2201 (CYL/CAP DRIVE)
DRIVE CLOCK
CYLINDER ON
FG
ACTIVE COIL SWITCHING LOGIC
SLOPE ADDITION
FG AMP COMPARATOR
CYLINDER ERROR
TRANSISTOR SATURATION DETECTOR
DRIVE TRANSISTOR CONTROL
YM3
YM2
YM1
YVM
YU1
YU2
YU3
YL1
YL2
YL3
YCS
R2208
R2209
FROM POWER
CYL VM
PS1001
PP2001
PS2001
IC2202 (CYLINDER DRIVE TR.)
FP2003
MAIN COIL 1
MAIN COIL 2
MAIN COIL 3
DD CYLINDER MOTOR
YFG IN
YPG IN
PG
PG AMP COMPARATOR
3V
VCC
DIRECTION LOGIC
DIRECTION DETECTOR
DIRECTION SWITCHING
DRIVE TRANSISTOR CONTROL
TRANSISTOR SATURATION DETECTOR
CAP VM
IC2203 (CAPSTAN DRIVE TR.)
CVM
CU1
CU2
CU3
CL1
CL2
CL3
CCS
R2212
MATRIX
LIMITER
CFG OUT
CFG IN
CAPSTAN R/S/F
CAPSTAN ERROR
TORQUE LIMIT
CECR
H1+
H1−
H2+
H2−
H3+
H3−
FG AMP COMP.
IC2205
IC2206
IC2204
VREF
DD CAPSTAN MOTOR
FP2002
HALL IC1
HALL IC2
HALL IC3
5V

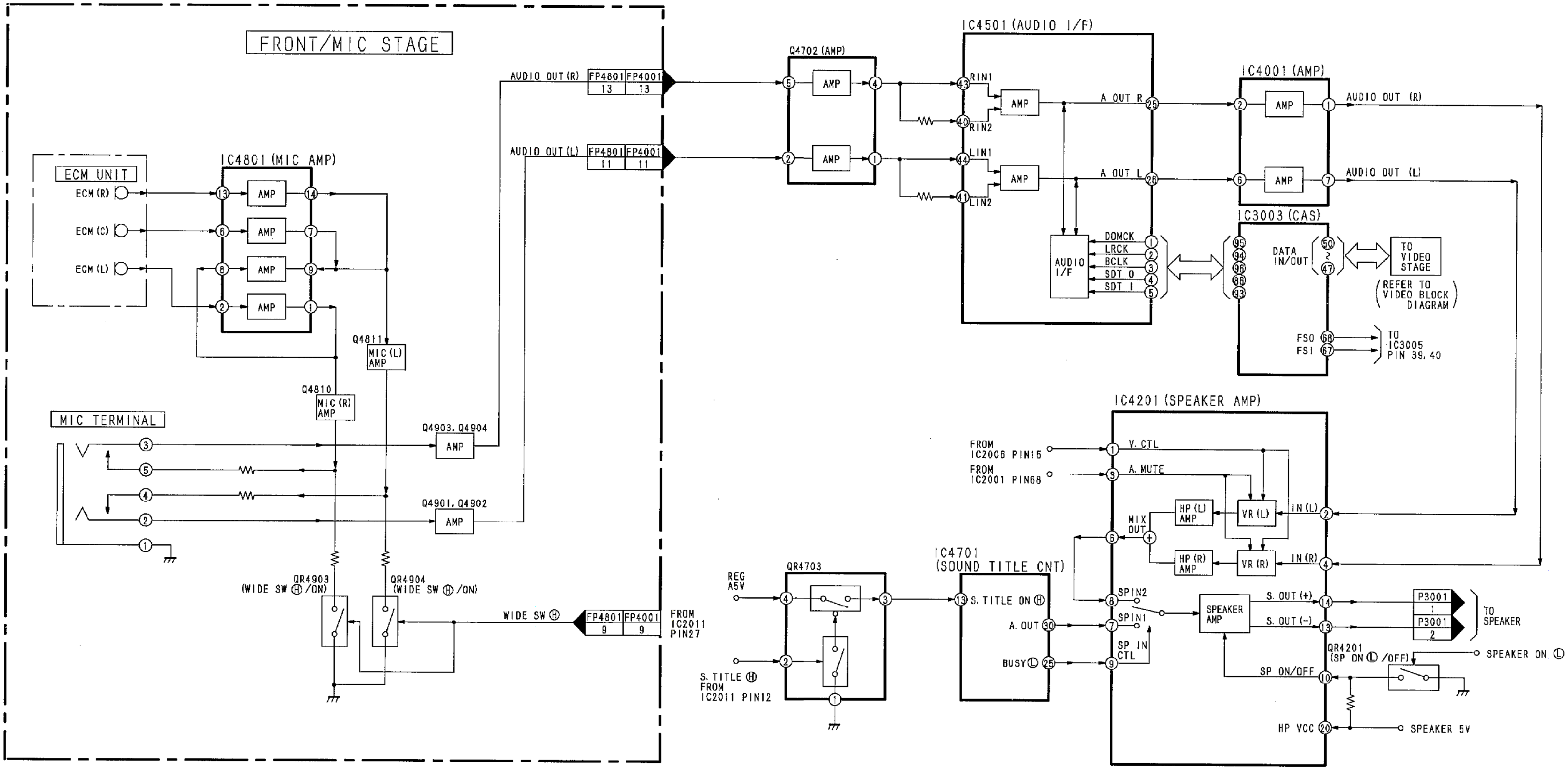
3-5. EVF & LCD MONITOR BLOCK DIAGRAM



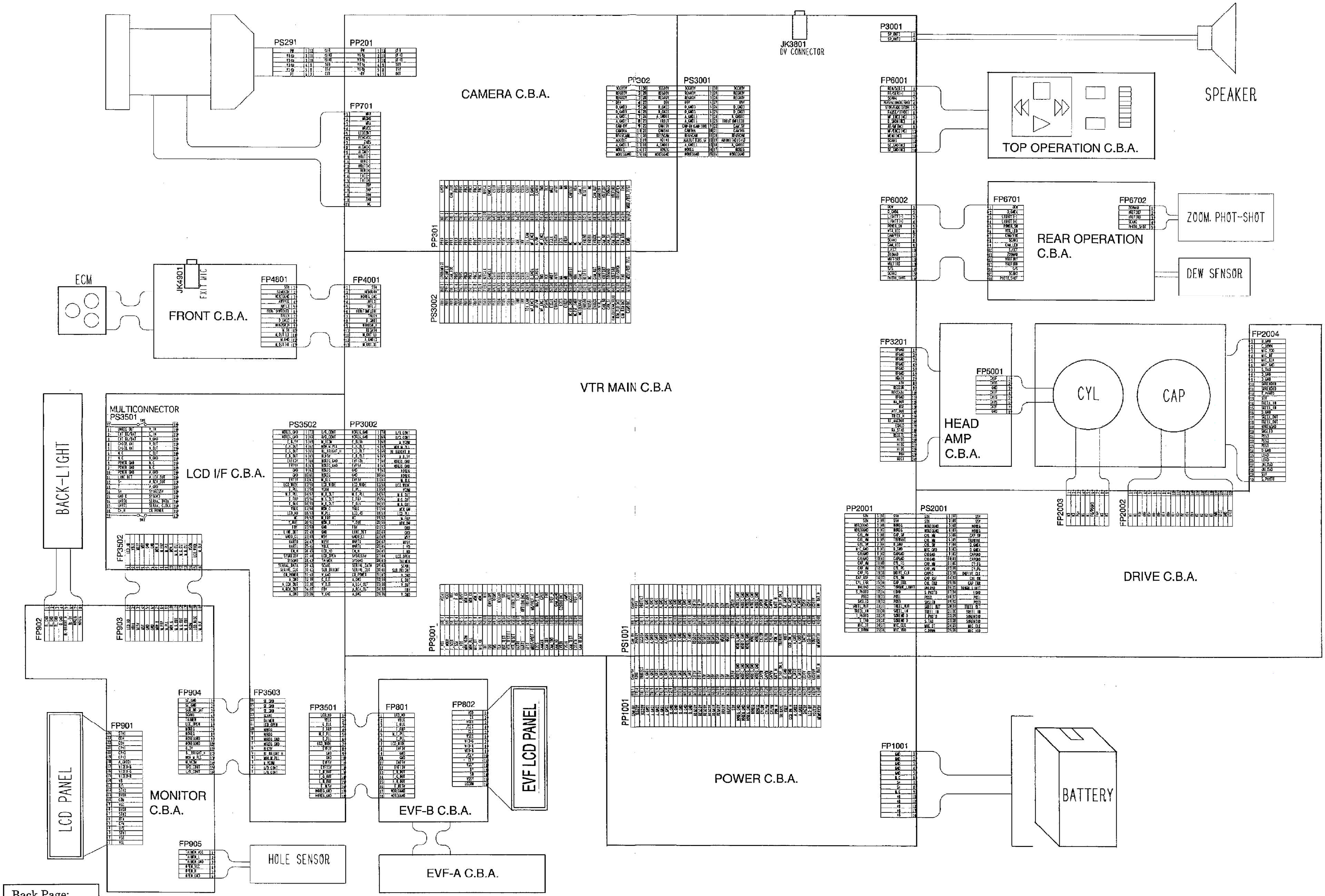
IC3006 (V. DRIVE)
TO MULTI 36PIN JACK
FROM IC2006 EVR D/A
Y OUT
Y OUT
C OUT
Y IN
C IN
Y GAIN CNT
C GAIN CNT
IC3007
V. BLK
IC610
IC611
IC609
SYNC SEP.
IC613
IC614
Q607
IC3001 (DV I/O)
C OUT
Y OUT
R-Y OUT
B-Y OUT
EVF HD
Q3002
AMP
Q3001
AMP
IC601 (VIDEO PROCESS FOR MONITOR)
Y IN
R-Y IN
B-Y IN
HD
R OUT
G OUT
B OUT
IC602 (VIDEO PROCESS FOR EVF)
Y IN
R-Y IN
B-Y IN
HD
R OUT
G OUT
B OUT
IC802 (EVF DRIVER)
V-SYNC
H-SYNC
PCO
BLD
V. BLK
LCD HD
E. VD
E. HD
IC901 (LCD DRIVER)
VD
HD
LCD CONTROLLER
1/2
PD
NV-DS5 ONLY
Q903, Q906
Q904, Q907
Q905, Q908
AMP
M-R-OUT
M-G-OUT
M-B-OUT
MONITOR LCD PANEL
M. 15V
M. 5V
E-R-OUT
E-G-OUT
E-B-OUT
EVF LCD PANEL
T881
Q881
BACK LIGHT DRIVE
BL881
BACK LIGHT
EVF 12V
EVF 5V
EVF 3V
IC604 (EVF ON Ⓛ/LCD ON Ⓗ)
M
E
SW CONT.
MON-G-OUT
MON-B-OUT
MON-PLL-OUT
TO EVR
(NOTE: M: MONITOR E: EVF)
Q601
Q605 (LCD ON Ⓛ/ON)
LCD 15V
Q606 (LCD ON Ⓛ/ON)
QR605
IC603
12V REG
Q602 (EVF ON Ⓛ/ON)
IC2011 (PC I/F)
FROM SYSTEM CONTROL & SERVO IC2001
LCD ON Ⓗ
EVF ON Ⓗ
Q610
QR610
QR604
Q608 (EVF ON Ⓛ/ON)
LCD 5V
IC606
2.8V REG
Q601 (EVF ON Ⓛ/ON)
PP3002
PS3502
FP3501
FP801
FP3502
FP903
FP3503
FP904
FP901
FP802
PP3001

Back Page:
SYSTEM CONTROL & SERVO Section

3-6. AUDIO BLOCK DIAGRAM

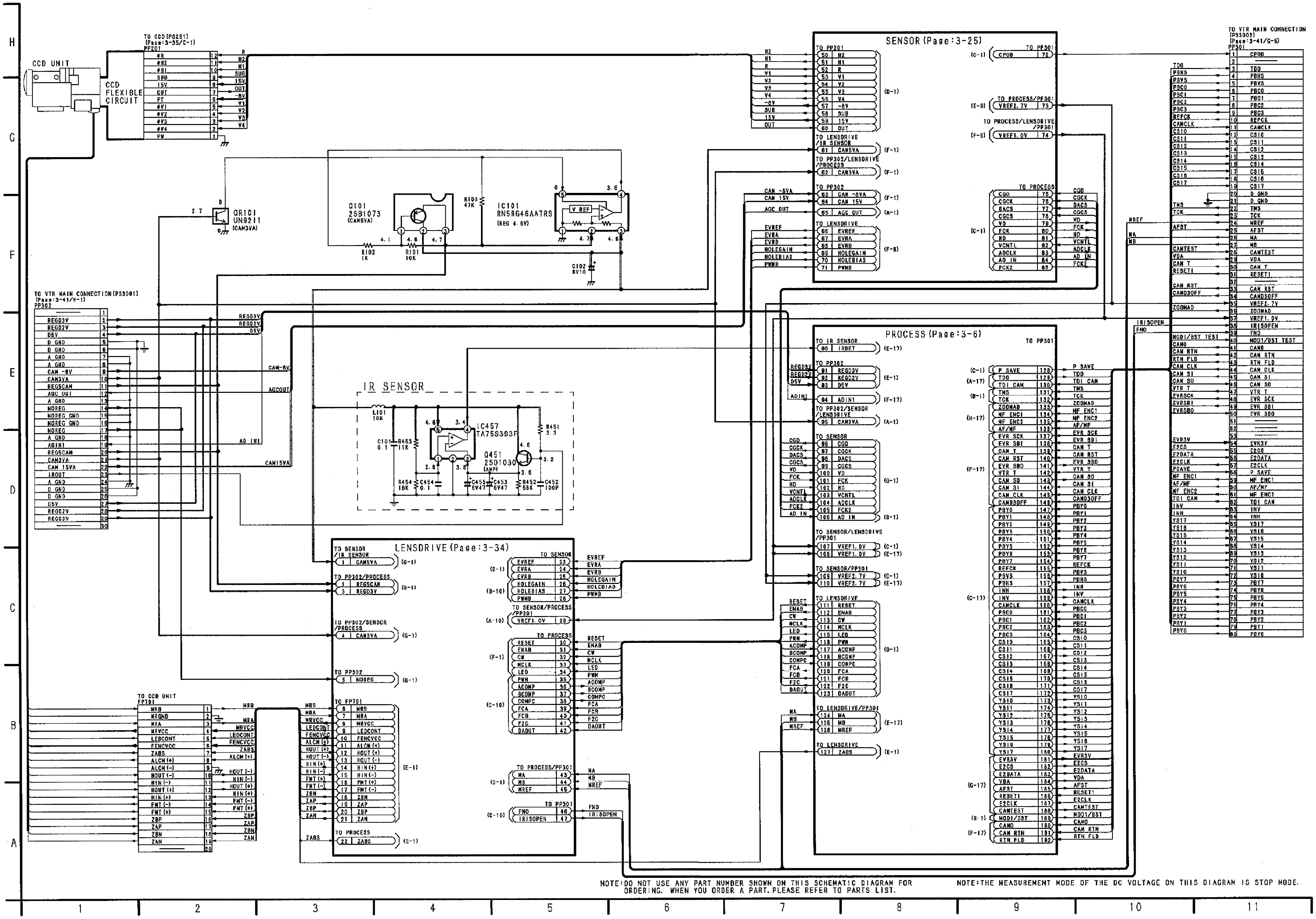

FRONT/MIC STAGE
ECM UNIT
ECM (R)
ECM (C)
ECM (L)
IC4801 (MIC AMP)
AMP
Q4811
MIC (L) AMP
Q4810
MIC (R) AMP
MIC TERMINAL
Q4903, Q4904
Q4901, Q4902
QR4903 (WIDE SW Ⓗ/ON)
QR4904 (WIDE SW Ⓗ/ON)
WIDE SW Ⓗ
FP4801 9
FP4001 9
FROM IC2011 PIN27
AUDIO OUT (R)
FP4801 13
FP4001 13
AUDIO OUT (L)
FP4801 11
FP4001 11
Q4702 (AMP)
IC4501 (AUDIO I/F)
RIN1
RIN2
LIN1
LIN2
A OUT R
A OUT L
AUDIO I/F
DOMCK
LRCK
BCLK
SDT O
SDT I
IC4001 (AMP)
AUDIO OUT (R)
AUDIO OUT (L)
IC3003 (CAS)
DATA IN/OUT
TO VIDEO STAGE
(REFER TO VIDEO BLOCK DIAGRAM)
FS0
FS1
TO IC3005 PIN 39, 40
IC4201 (SPEAKER AMP)
FROM IC2006 PIN15
FROM IC2001 PIN68
V. CTL
A. MUTE
MIX OUT
HP (L) AMP
HP (R) AMP
VR (L)
VR (R)
IN (L)
IN (R)
SPIN2
SPIN1
SP IN CTL
SPEAKER AMP
S. OUT (+)
S. OUT (-)
SP ON/OFF
HP VCC
P3001 1
P3001 2
TO SPEAKER
QR4201 (SP ON Ⓛ/OFF)
SPEAKER ON Ⓛ
SPEAKER 5V
REG A5V
QR4703
S. TITLE Ⓗ FROM IC2011 PIN12
IC4701 (SOUND TITLE CNT)
S. TITLE ON Ⓗ
A. OUT
BUSY Ⓛ

3-7. INTERCONNECTION SCHEMATIC DIAGRAM


PS291
PP201
FP701
CAMERA C.B.A.
PP302
PS3001
JK3801
DV CONNECTOR
P3001
SPEAKER
FP6001
TOP OPERATION C.B.A.
FP6002
FP6701
FP6702
ZOOM, PHOT-SHOT
REAR OPERATION C.B.A.
DEW SENSOR
PP301
PS3002
ECM
JK4901
EXIT MIC
FRONT C.B.A.
FP4801
FP4001
VTR MAIN C.B.A.
FP3201
FP5001
HEAD AMP C.B.A.
CYL
CAP
FP2004
FP2003
FP2002
DRIVE C.B.A.
PP2001
PS2001
BACK-LIGHT
MULTICONNECTOR
PS3501
LCD I/F C.B.A.
PS3502
PP3002
FP3502
FP802
FP903
PP3001
PS1001
PP1001
FP904
FP3503
FP3501
FP801
FP802
EVF LCD PANEL
EVF-B C.B.A.
EVF-A C.B.A.
FP901
LCD PANEL
MONITOR C.B.A.
FP905
HOLE SENSOR
POWER C.B.A.
FP1001
BATTERY

Back Page:
AUDIO Section

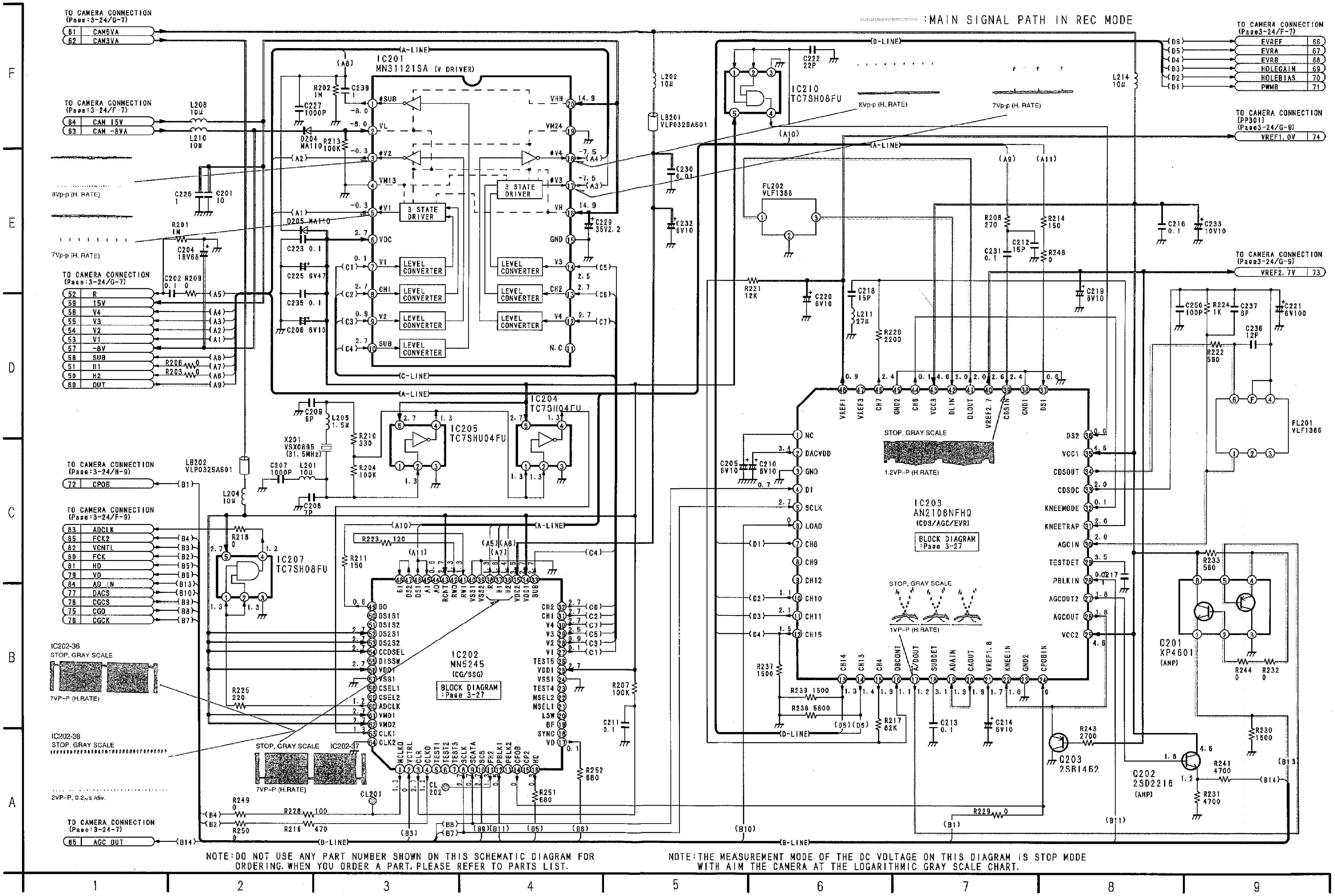
3-8. CAMERA CONNECTION SCHEMATIC DIAGRAM


CCD UNIT
CCD FLEXIBLE CIRCUIT
TO CCD (PG201) (Page:3-35/C-1) PP201
QR101 UN9211 (CAM3VA)
Q101 2SB1073 (CAM5VA)
R103 47K
IC101 RN5RG46AATRS (REG 4.6V)
V REF
R102 1K
R101 10K
C102 6V10
TO VTR MAIN CONNECTION (PS3001) (Page:3-41/H-1) PP302
IR SENSOR
L101 10u
IC457 TA75S393F
Q451 2SD1030 (AMP)
R451 3.3
R453 11K
R454 18K
C454 0.1
C455 6V47
C453 6V47
R452 56K
C452 100P
TO CCD UNIT FP701
SENSOR (Page:3-25)
PROCESS (Page:3-6)
LENSDRIVE (Page:3-34)
TO VTR MAIN CONNECTION (PS3302) (Page:3-41/G-5) PP301
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

3-9. SENSOR SCHEMATIC DIAGRAM



:MAIN SIGNAL PATH IN REC MODE
TO CAMERA CONNECTION (Page:3-24/G-7)
61 CAM5VA
62 CAM3VA
TO CAMERA CONNECTION (Page:3-24/F-7)
64 CAM 15V
63 CAM -8VA
TO CAMERA CONNECTION (Page:3-24/G-7)
52 R
59 15V
56 V4
55 V3
54 V2
53 V1
57 -8V
58 SUB
51 H1
50 H2
60 OUT
TO CAMERA CONNECTION (Page:3-24/H-9)
72 CPOB
TO CAMERA CONNECTION (Page:3-24/F-9)
83 ADCLK
85 FCK2
82 VCNTL
80 FCK
81 HD
79 VD
84 AD IN
77 DACS
78 CGCS
75 CGO
76 CGCK
TO CAMERA CONNECTION (Page:3-24-7)
65 AGC OUT
IC201 MN31121SA (V DRIVER)
3 STATE DRIVER
LEVEL CONVERTER
IC204 TC7SH04FU
IC205 TC7SHU04FU
IC207 TC7SH08FU
IC202 MN5245 (CG/SSG)
BLOCK DIAGRAM :Page 3-27
IC210 TC7SH08FU
IC203 AN2108NFHQ (CDS/AGC/EVR)
BLOCK DIAGRAM :Page 3-27
FL202 VLF1366
FL201 VLF1366
Q201 XP4601 (AMP)
Q202 2SD2216 (AMP)
Q203 2SB1462
X201 VSX0695 (31.5MHz)
LB201 VLP0329A601
LB202 VLP0329A601
L202 10μ
L214 10μ
L208 10μ
L210 10μ
L204 10μ
L205 1.5μ
L201 10μ
L211 27μ
D204 MA110
D205 MA110
8Vp-p (H. RATE)
7Vp-p (H. RATE)
IC202-36 STOP, GRAY SCALE 7VP-P (H.RATE)
IC202-38 STOP, GRAY SCALE
2VP-P, 0.2μs /div.
STOP, GRAY SCALE IC202-37 7VP-P (H.RATE)
STOP, GRAY SCALE 1.2VP-P (H.RATE)
STOP, GRAY SCALE 1VP-P (H.RATE)
TO CAMERA CONNECTION (Page3-24/F-7)
66 EVREF
67 EVRA
68 EVRB
69 HOLEGAIN
70 HOLEBIAS
71 PWMB
TO CAMERA CONNECTION (PP301) (Page3-24/G-9)
74 VREF1.0V
TO CAMERA CONNECTION (Page3-24/G-9)
73 VREF2.7V
A-LINE
B-LINE
C-LINE
D-LINE
CL201
CL202

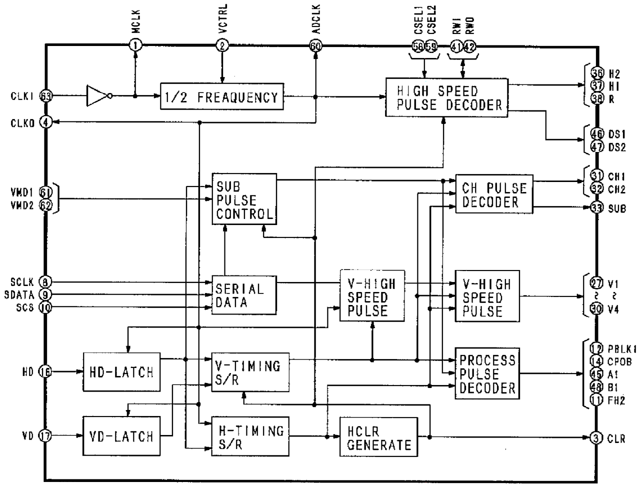
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

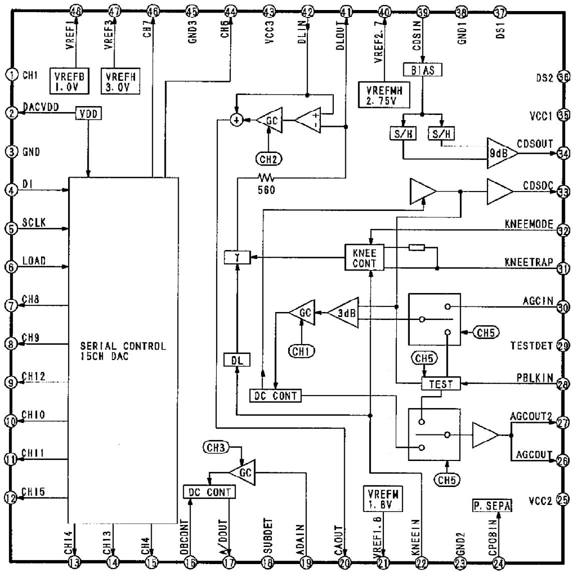
Back Page:
CAMERA CONNECTION Section

SENSOR IC BLOCK

IC202: MN5245
(SCHEMATIC DIAGRAM:Page 3-25/B-4)


MCLK ①
VCTRL ②
ADCLK ⑥⓪
CSEL1 CSEL2 ⑤⑧ ⑤⑨
RWI RWO ④① ④②
CLKI ⑥③
CLKO ④
1/2 FREAQUENCY
HIGH SPEED PULSE DECODER
㊱ H2
㊲ H1
㊳ R
㊻ DS1
㊼ DS2
VMD1 ⑥①
VMD2 ⑥②
SUB PULSE CONTROL
CH PULSE DECODER
㉛ CH1
㉜ CH2
㉝ SUB
SCLK ⑧
SDATA ⑨
SCS ⑩
SERIAL DATA
V-HIGH SPEED PULSE
V-HIGH SPEED PULSE
㉗ V1
㉚ V4
HD ⑯
HD-LATCH
V-TIMING S/R
PROCESS PULSE DECODER
⑫ PBLK1
⑭ CPOB
㊺ A1
㊽ B1
⑪ FH2
VD ⑰
VD-LATCH
H-TIMING S/R
HCLR GENERATE
③ CLR

IC203: AN2108NFHQ
(SCHEMATIC DIAGRAM:Page 3-26/C-7)


㊽ VREF1
㊼ VREF3
㊻ CH7
㊺ GND3
㊹ CH6
㊸ VCC3
㊷ DLIN
㊶ DLOUT
㊵ VREF2.7
㊴ CDSIN
㊳ GND1
㊲ DS1
① CH1
② DACVDD
③ GND
④ DI
⑤ SCLK
⑥ LOAD
⑦ CH8
⑧ CH9
⑨ CH12
⑩ CH10
⑪ CH11
⑫ CH15
VREFB 1.0V
VREFH 3.0V
VDD
SERIAL CONTROL 15CH DAC
GC
CH2
560
BIAS
VREFMH 2.75V
S/H
S/H
9dB
㊱ DS2
㉟ VCC1
㉞ CDSOUT
㉝ CDSDC
㉜ KNEEMODE
㉛ KNEETRAP
KNEE CONT
Y
3dB
GC
CH1
DL
DC CONT
CH5
CH5
TEST
㉚ AGCIN
㉙ TESTDET
㉘ PBLKIN
㉗ AGCOUT2
㉖ AGCOUT
CH5
CH3
GC
DC CONT
VREFM 1.8V
P. SEPA
㉕ VCC2
⑬ CH14
⑭ CH13
⑮ CH4
⑯ OBCONT
⑰ A/DOUT
⑱ SUBDET
⑲ ADAIN
⑳ CAOUT
㉑ VREF1.8
㉒ KNEEIN
㉓ GND2
㉔ CPOBIN

PROCSS I/O TABLE

IC301: DSP

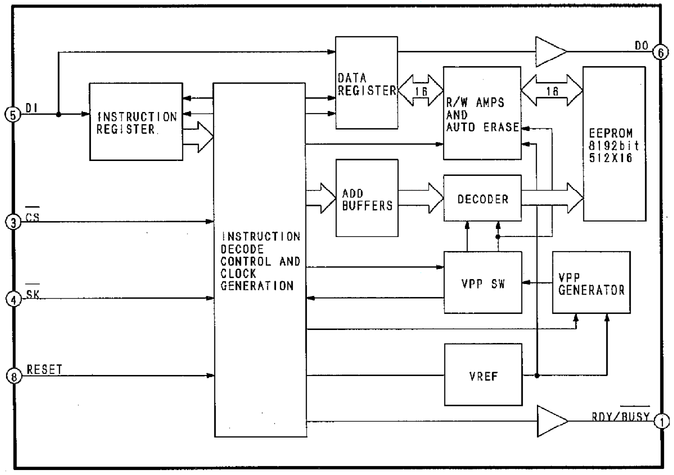
PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	POR	I	Reset: Power On (L: Reset, H: Normal/TRST)
2	PDOWN	I	Camera Signal Process Halt Signal: Playback Mode (L: Halt)
3	AVDD	—	Linear AF, Analogue Voltage
4	VRT	—	Linear AF, Reference Top Voltage
5	VRB	—	Linear AF, Reference Bottom Voltage
6	DAOUT	O	Linear AF, DA Output
7	AVSS	—	Linear AF, Analogue GND
8	VZYOUT7	I	Digital Y Signal (MSB)
9	VZYOUT6		
10	VZYOUT5		
11	VZYOUT4		
12	VZYOUT3		
13	VZYOUT2		
14	VZYOUT1		
15	VZYOUT0		Digital Y Signal (LSB)
16	DDFCK	I	DD/Clock Input for Playback
17	INV	O	INH Signal
18	VDD	—	Digital Voltage
19	VSS	—	Digital GND
20	INH	O	INH Signal
21	VZCOUT7	O	Digital C Signal (MSB)
22	VZCOUT6		
23	VZCOUT5		
24	VZCOUT4		
25	VZCOUT3		
26	VZCOUT2		
27	VZCOUT1		
28	VZCOUT0		Digital C Signal (LSB)
29	UVSELOUT	O	(N.C.)
30	PBHD	I	Playback HS
31	PBVD	I	Playback VS
32	VRT45M	O	SYNC (4.5MHz) to VTR
33	PBCIN3	I	Playback C Siganl (MSB)
34	PBCIN2		
35	PBCIN1		
36	PBCIN0		Playback C Siganl (LSB)
37	PBYIN7	I	Playback Y Signal (MSB)
38	PBYIN6		
39	PBYIN5		
40	PBYIN4		
41	PBYIN3		
42	PBYIN2		
43	PBYIN1		
44	PBYIN0		Playback Y Signal (LSB)
45	MSEL1	I	Micom Select Signal
46	PWM	O	PWM for ALC Control
47	V1V2	O	Act Detect Finish Signal to Micom
48	BEND	O	Block Data Operation Finish Signal to Micom
49	MVD	O	VD Output for Micom
50	ADRR8	I	GND
51	ADRR7		
52	ADRR6		
53	ADRR5		
54	VDD	—	Digital Voltage
55	VSS	—	Digital GND
56	ADRR4	I	Micom Address Signal
57	ADDR3	I	Micom Address Signal
58	ADDR2		
59	ADDR1		
60	ADDR0		
61	DB7	I/O	Micom Address Signal
62	DB6		
63	DB5		
64	DB4		
65	DB3		
66	DB2		
67	DB1		
68	DB0		
69	ASTB	I	Micom Address Strove Signal
70	DSTB	I	Micom Data Strove Signal
71	RW	I	Micom Read/Write Signal
72	VDDH	—	INTERFACE Voltage Input (3.6V)
73	TST3	I	Test Select Input (Noraml: L)
74	TST2	I	Test Select Input (Noraml: L)
75	TST1	I	Test Select Input (Normal: L, BSCAN: H)
76	VD	I	VD Signal from SSG
77	HD	I	HD Signal from SSG
78	FCK	I	FCK Signal from SSG
79	VDDH	I	Interface Voltage (3.6V)
80	ADIN9	I	A/D Signal (MSB)
81	ADIN8		
82	ADIN7		
83	ADIN6		
84	ADIN5		
85	ADIN4		
86	ADIN3		
87	ADIN2		
88	ADIN1		
89	ADIN0		A/D Signal (LSB)
90	VDD	—	Digital Voltage
91	VSS	—	Digital GND
92	TST0	I	Test Select Input (Normal: L, BSCAN: H)
93	TST4	I	Test Select Input (Normal: L, BSCAN: H)
94	DSEL	I	Delay Select (0T: L, 1T: H)
95	VCTRLO	O	CCD V-Transfer Halt Signal (Halt: H)
96	FCK2	I	Camera 2FCK Signal: from Sensor Circuit
97	NHRST	—	(N.C.)
98	TDO	O	Boundary Scan Data
99	TDI	I	Boundary Scan Data
100	TMD	I	Boundary Scan Mode Select
101	TCK	I	Boundary Scan Clock
102	FMPOR	O	Field Memory POR Signal to FM
103	FMOE	O	Field Memory OE Signal to FM
104	FMRAD	O	Field Memory RAD Signal to FM
105	FMSTR	O	Field Memory RSTR Signal to FM
106	FMRE	O	Field Memory RE Signal to FM
107	FMRWAE	O	Field Memory RAE/WAE Signal to FM
108	FMWAD	O	Field Memory WAD Signal to FM
109	FMRSTW	O	Field Memory RSTW Signal to FM

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
110	FMWE	O	Field Memory WE Signal to FM	128	FMYIN6	O	Y Signal (MSB 2nd) to FM
111	FMYOUT7	I	Field Memory Y Signal (MSB)	129	FMYIN5		
112	FMYOUT6			130	FMYIN4		
113	FMYOUT5			131	FMYIN3		
114	FMYOUT4			132	FMYIN2		
115	FMYOUT3			133	FMYIN1		
116	FMYOUT2			134	FMYIN0		Y Signal (LSB) to FM
117	FMYOUT1			135	FMCIN3	O	C Signal (MSB) to FM
118	FMYOUT0		Field Memory Y Signal (LSB)	136	FMCIN2		
119	FMCOUT3	I	Field Memory C Signal (MSB)	137	FMCIN1		
120	FMCOUT2			138	FMCIN0		C Signal (LSB) to FM
121	FMCOUT1			139	ACOMP	I	Step-out Detect Pulse (A Phase)
122	FMCOUT0		Field Memory C Signal (LSB)	140	BCOMP	I	Step-out Detect Pulse (B Phase)
123	VZPLSTST	—	(N.C.)	141	SIG	I	Detect Pulse
124	HZPLSTST	—	(N.C.)	142	FCA	O	LM Modulation Pulse (A Phase)
125	FMYIN7	O	Y Signal (MSB) to FM	143	FCB	O	LM Modulation Pulse (B Phase)
126	VDD	—	Digital Voltage	144	F2C	O	LM Adder Pulse
127	VSS	—	Digital GND				

PROCSS IC BLOCK

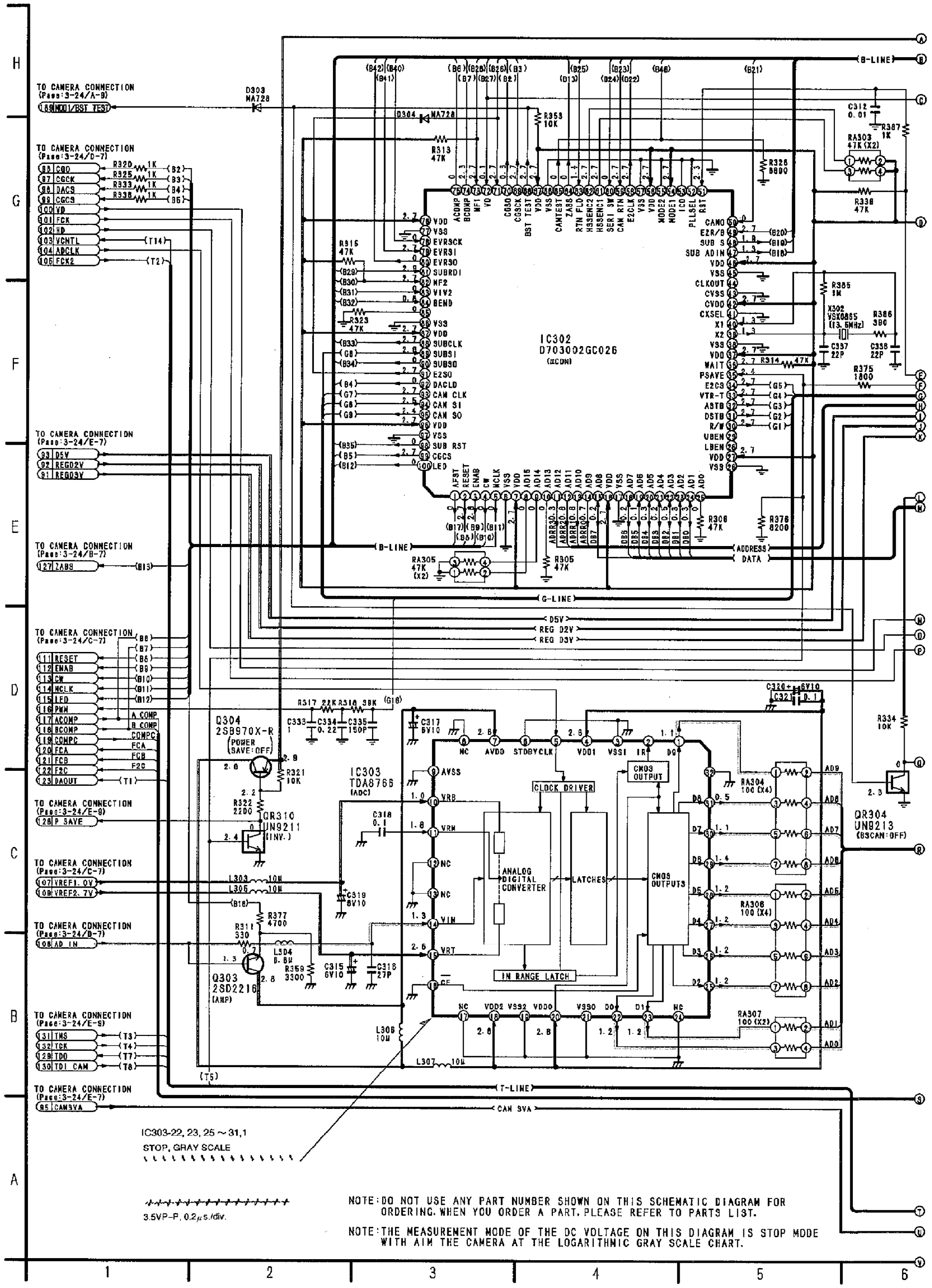
IC308: AK6480AF

(SHEMATIC DIAGRAM:Page 3-24/G-13)



DO ⑥
DI ⑤
INSTRUCTION REGISTER
DATA REGISTER
16
R/W AMPS AND AUTO ERASE
16
EEPROM 8192bit 512X16
ADD BUFFERS
DECODER
CS ③
SK ④
INSTRUCTION DECODE CONTROL AND CLOCK GENERATION
VPP SW
VPP GENERATOR
RESET ⑧
VREF
RDY/BUSY ①

3-10. PROCESS SCHEMATIC DIAGRAM



H
G
F
E
D
C
B
A
1
2
3
4
5
6
TO CAMERA CONNECTION
IC302 D703002GC026 (uCOM)
IC303 TDA8766 (ADC)
Q304 2SB970X-R (POWER SAVE:OFF)
QR310 UN9211 (INV.)
Q303 2SD2216 (AMP)
QR304 UN9213 (B3CAN:OFF)
X302 VSX0855 (13.5MHz)
CLOCK DRIVER
ANALOG DIGITAL CONVERTER
LATCHES
CMOS OUTPUTS
CMOS OUTPUT
IN RANGE LATCH
B-LINE
G-LINE
T-LINE
D5V
REG D2V
REG D3V
ADDRESS
DATA
CAN SVA
IC303-22, 23, 25 ~ 31, 1
STOP, GRAY SCALE
3.5VP-P, 0.2μs/div.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

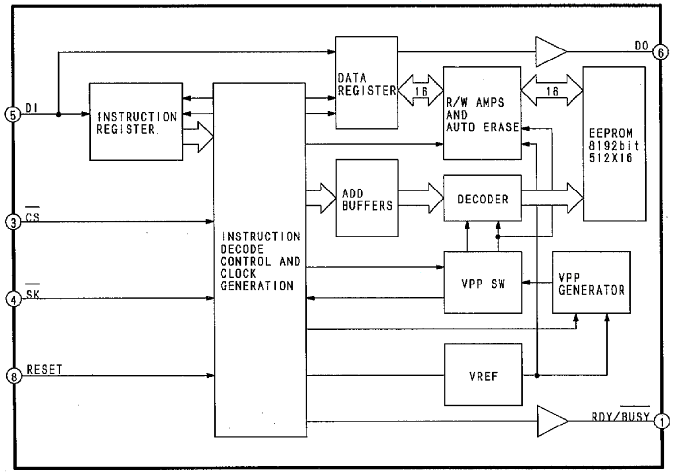
Back Page:
SENSOR Section

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
110	FMWE	O	Field Memory WE Signal to FM	128	FMYIN6	O	Y Signal (MSB 2nd) to FM
111	FMYOUT7	I	Field Memory Y Signal (MSB)	129	FMYIN5		
112	FMYOUT6			130	FMYIN4		
113	FMYOUT5			131	FMYIN3		
114	FMYOUT4			132	FMYIN2		
115	FMYOUT3			133	FMYIN1		
116	FMYOUT2			134	FMYIN0		Y Signal (LSB) to FM
117	FMYOUT1			135	FMCIN3	O	C Signal (MSB) to FM
118	FMYOUT0		Field Memory Y Signal (LSB)	136	FMCIN2		
119	FMCOUT3	I	Field Memory C Signal (MSB)	137	FMCIN1		
120	FMCOUT2			138	FMCIN0		C Signal (LSB) to FM
121	FMCOUT1			139	ACOMP	I	Step-out Detect Pulse (A Phase)
122	FMCOUT0		Field Memory C Signal (LSB)	140	BCOMP	I	Step-out Detect Pulse (B Phase)
123	VZPLSTST	—	(N.C.)	141	SIG	I	Detect Pulse
124	HZPLSTST	—	(N.C.)	142	FCA	O	LM Modulation Pulse (A Phase)
125	FMYIN7	O	Y Signal (MSB) to FM	143	FCB	O	LM Modulation Pulse (B Phase)
126	VDD	—	Digital Voltage	144	F2C	O	LM Adder Pulse
127	VSS	—	Digital GND				

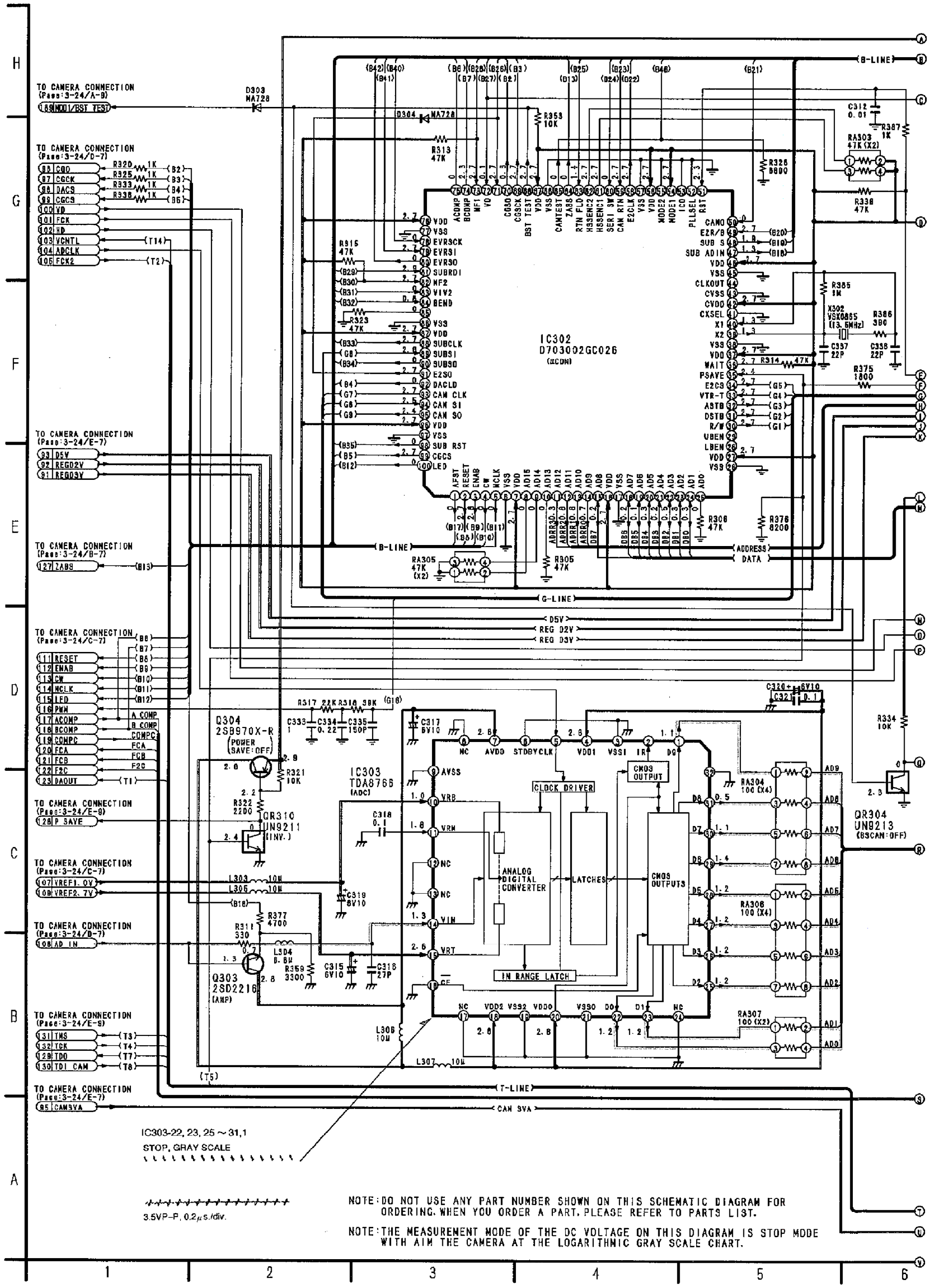
PROCSS IC BLOCK

IC308: AK6480AF

(SHEMATIC DIAGRAM:Page 3-24/G-13)


DO ⑥
DI ⑤
INSTRUCTION REGISTER
DATA REGISTER
16
R/W AMPS AND AUTO ERASE
16
EEPROM 8192bit 512X16
ADD BUFFERS
DECODER
INSTRUCTION DECODE CONTROL AND CLOCK GENERATION
CS ③
SK ④
VPP SW
VPP GENERATOR
RESET ⑧
VREF
RDY/BUSY ①

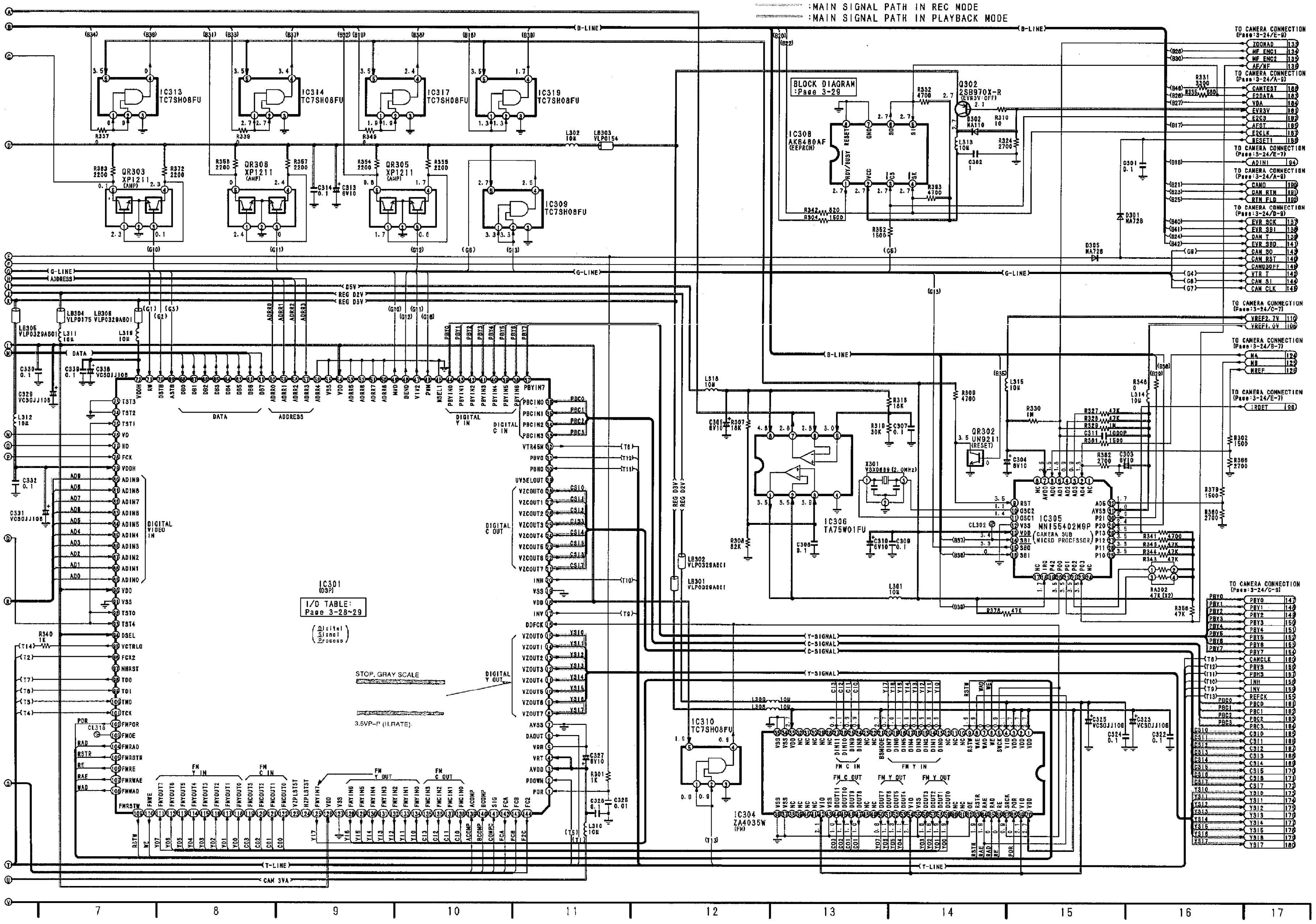
3-10. PROCESS SCHEMATIC DIAGRAM


H
G
F
E
D
C
B
A
1
2
3
4
5
6
TO CAMERA CONNECTION
IC302
D703002GC026
(uCOM)
IC303
TDA8766
(ADC)
Q304
2SB970X-R
(POWER SAVE:OFF)
Q303
2SD2216
(AMP)
QR310
UN9211
(INV.)
QR304
UN9213
(BSCAN:OFF)
X302
VSX0885
(13.5MHz)
B-LINE
G-LINE
T-LINE
D5V
REG D2V
REG D3V
CAN SVA
ADDRESS
DATA
CLOCK DRIVER
ANALOG DIGITAL CONVERTER
LATCHES
CMOS OUTPUTS
CMOS OUTPUT
IN RANGE LATCH
IC303-22, 23, 25 ~ 31,1
STOP, GRAY SCALE
3.5VP-P, 0.2μs./div.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

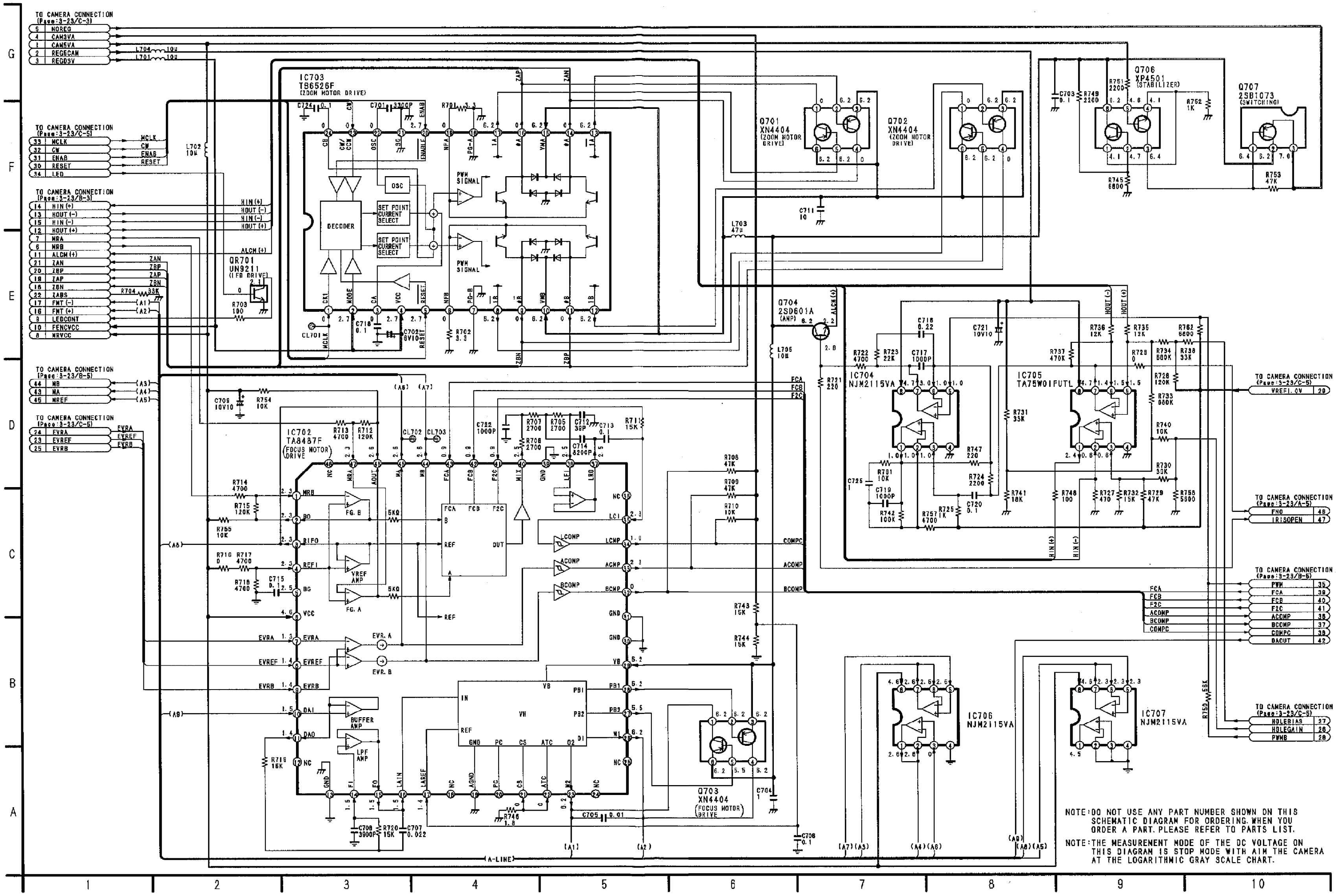
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

Back Page:
SENSOR Section



:MAIN SIGNAL PATH IN REC MODE
:MAIN SIGNAL PATH IN PLAYBACK MODE
B-LINE
G-LINE
T-LINE
CAM 3VA
ADDRESS
DATA
D5V
REG D2V
REG D3V
IC313 TC7SH08FU
IC314 TC7SH08FU
IC317 TC7SH08FU
IC319 TC7SH08FU
IC309 TC7SH08FU
QR303 XP1211 (AMP)
QR306 XP1211 (AMP)
QR305 XP1211 (AMP)
L302 10μ
LB303 VLP0154
BLOCK DIAGRAM :Page 3-29
IC308 AK6480AF (EEPROM)
Q302 2SB970X-R (EVR3V OFF)
D302 MA110
D301 MA728
D305 MA728
TO CAMERA CONNECTION (Page:3-24/E-9)
ZOOMAD
MF ENC1
MF ENC2
AE/MF
TO CAMERA CONNECTION (Page:3-24/A-9)
CAMTEST
E2DATA
VDA
EVR3V
E2CS
AEST
E2CLK
RESET1
TO CAMERA CONNECTION (Page:3-24/E-7)
ADIN1
CAMO
CAM RTN
RTN FLD
TO CAMERA CONNECTION (Page:3-24/D-9)
EVR SCK
EVR SBI
CAM T
EVR SBO
CAM SO
CAM RST
CAMD3OFF
VTR T
CAM SI
CAM CLK
TO CAMERA CONNECTION (Page:3-24/C-7)
VREF2.7V
VREF1.0V
TO CAMERA CONNECTION (Page:3-24/B-7)
HA
HB
HREF
IRDET
LB304 VLP0175
LB306 VLP0329A601
LB305 VLP0329A601
IC301 (DSP)
I/O TABLE: Page 3-28~29
(Digital Signal Process)
DIGITAL VIDEO
DIGITAL Y IN
DIGITAL C IN
DIGITAL C OUT
DIGITAL Y OUT
STOP, GRAY SCALE
3.5VP-P (H.RATE)
FM Y IN
FM C IN
FM Y OUT
FM C OUT
IC306 TA75W01FU
X301 VSX0699 (2.0MHz)
QR302 UN9211 (RESET)
IC305 MN155402M9P (CAMERA SUB MICRO PROCESSOR)
RA302 47K (X2)
LB302 VLP0329A601
LB301 VLP0329A601
Y-SIGNAL
C-SIGNAL
IC310 TC7SH08FU
IC304 ZA4035W (FM)
TO CAMERA CONNECTION (Page:3-24/C-9)
PBY0
PBY1
PBY2
PBY3
PBY4
PBY5
PBY6
PBY7
CAMCLK
PBVS
PBHS
INH
INV
REFCK
PBC0
PBC1
PBC2
PBC3
CS10
CS11
CS12
CS13
CS14
CS15
CS16
CS17
YS10
YS11
YS12
YS13
YS14
YS15
YS16
YS17
7
8
9
10
11
12
13
14
15
16
17

3-11. LENS DRIVE SCHEMATIC DIAGRAM



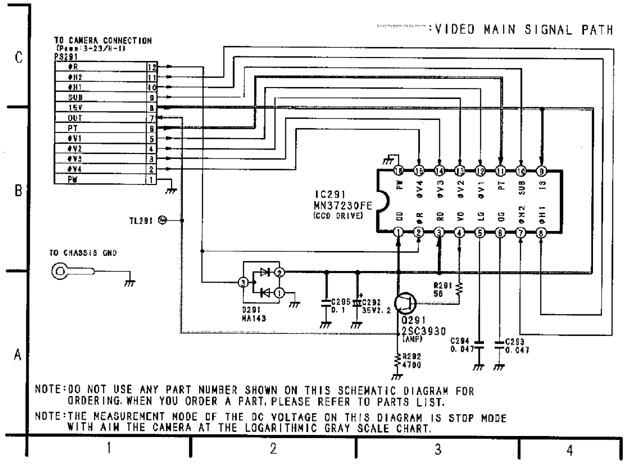
TO CAMERA CONNECTION (Page:3-23/C-3)
5 NOREG
4 CAM3VA
1 CAM5VA
2 REGECAM
3 REGD9V
L704 10µ
L701 10µ
TO CAMERA CONNECTION (Page:3-23/C-5)
33 MCLK
32 CW
31 ENAB
30 RESET
34 LED
L702 10µ
TO CAMERA CONNECTION (Page:3-23/B-3)
14 HIN(+)
13 HOUT(−)
15 HIN(−)
12 HOUT(+)
7 NRA
6 NRB
11 ALCH(+)
21 ZAN
20 ZBP
19 ZAP
18 ZBN
22 ZABS
17 FMT(−)
16 FMT(+)
9 LEDCONT
10 FENCVCC
8 NRVCC
R704 33K
QR701 UN9211 (LED DRIVE)
R703 100
TO CAMERA CONNECTION (Page:3-23/B-5)
44 NB
43 NA
45 NREF
TO CAMERA CONNECTION (Page:3-23/C-5)
24 EVRA
23 EVREF
25 EVRB
IC703 TB6526F (ZOOM MOTOR DRIVE)
C724 0.1
C701 3300P
R701 3.3
DECODER
OSC
SET POINT CURRENT SELECT
PWM SIGNAL
CL701
C716 0.1
C702 8V10
R702 3.3
Q701 XN4404 (ZOOM MOTOR DRIVE)
Q702 XN4404 (ZOOM MOTOR DRIVE)
C703 0.1
R749 2200
R751 2200
Q706 XP4501 (STABILIZER)
R752 1K
R745 6800
Q707 2SB1073 (SWITCHING)
R753 47K
C711 10
L703 47µ
Q704 2SD601A (AMP)
L705 10µ
R721 220
IC704 NJM2115VA
IC705 TA75W01FUTL
C718 0.22
C721 10V10
R722 4700
R723 22K
C717 1000P
R737 470K
R736 12K
R735 12K
R762 6800
R734 680K
R738 33K
R728 0
R726 120K
R733 680K
R731 33K
R740 10K
R730 33K
R747 220
R724 2200
C725 1
R731 10K
C719 1000P
R742 100K
R757 4700
R725 1K
C720 0.1
R741 18K
R746 100
R727 470
R732 15K
R729 47K
R755 5600
TO CAMERA CONNECTION (Page:3-23/C-5)
VREFLOW 29
TO CAMERA CONNECTION (Page:3-23/A-5)
FNO 48
IRISOPEN 47
TO CAMERA CONNECTION (Page:3-23/C-5)
PWM 35
FCA 38
FCB 40
F2C 41
ACOMP 36
BCOMP 37
COMPC 39
DACUT 42
TO CAMERA CONNECTION (Page:3-23/B-5)
HOLEBIAS 27
HOLEGAIN 26
PWMB 28
R750 68K
C709 10V10
R754 10K
IC702 TA8487F (FOCUS MOTOR DRIVE)
R713 4700
R712 120K
CL702
CL703
C722 1000P
R707 2700
R705 2700
C712 33P
C713 0.1
R711 15K
R708 2700
C714 8200P
R714 4700
R715 120K
R755 10K
R716 0
R717 4700
R718 4700
C715 0.1
FG.B
FG.A
VREF AMP
BUFFER AMP
LPF AMP
LCOMP
ACOMP
BCOMP
EVR.A
EVR.B
R706 47K
R709 47K
R710 10K
R743 15K
R744 15K
R719 15K
C708 3900P
R720 15K
C707 0.022
R746 1.8
C705 0.01
Q703 XN4404 (FOCUS MOTOR DRIVE)
C704 1
C706 0.1
IC706 NJM2115VA
IC707 NJM2115VA
A-LINE
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

Back Page:
PROCESS Section

3-12. CCD FLEX. CARD SCHEMATIC DIAGRAM

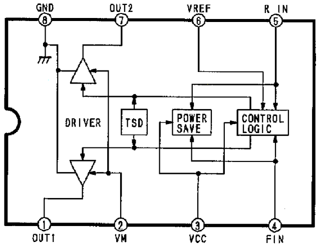

:VIDEO MAIN SIGNAL PATH
TO CAMERA CONNECTION (Page 3-23/H-1)
PS291
ϕR
ϕH2
ϕH1
SUB
15V
OUT
PT
ϕV1
ϕV2
ϕV3
ϕV4
PW
IC291
MN37230FE
(CCD DRIVE)
TL291
TO CHASSIS GND
D291
MA143
C295 0.1
C292 35V2.2
Q291
2SC3930
(AMP)
R291 56
R292 4700
C294 0.047
C293 0.047
C
B
A
1
2
3
4

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

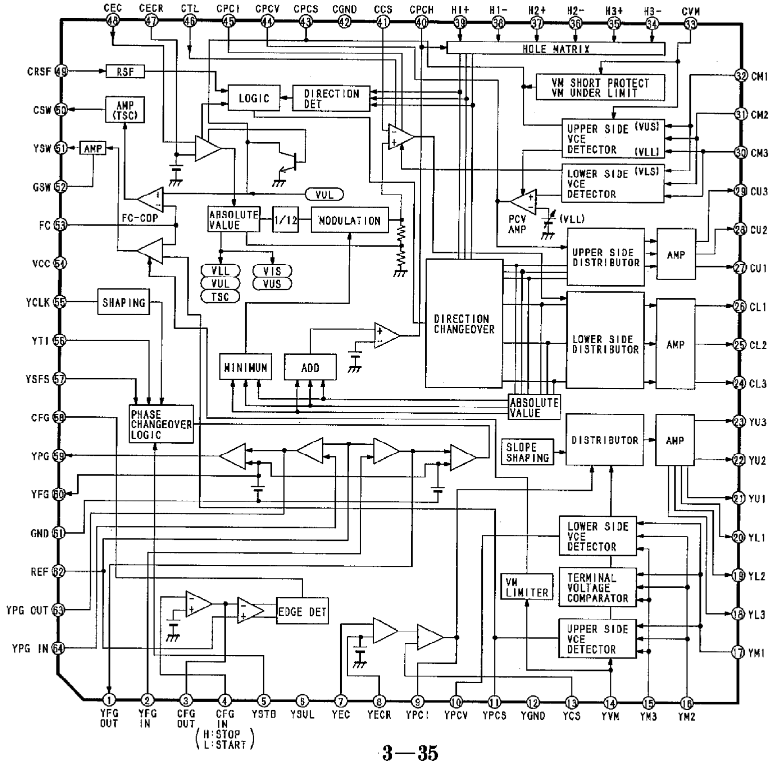
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

DRIVE IC BLOCK

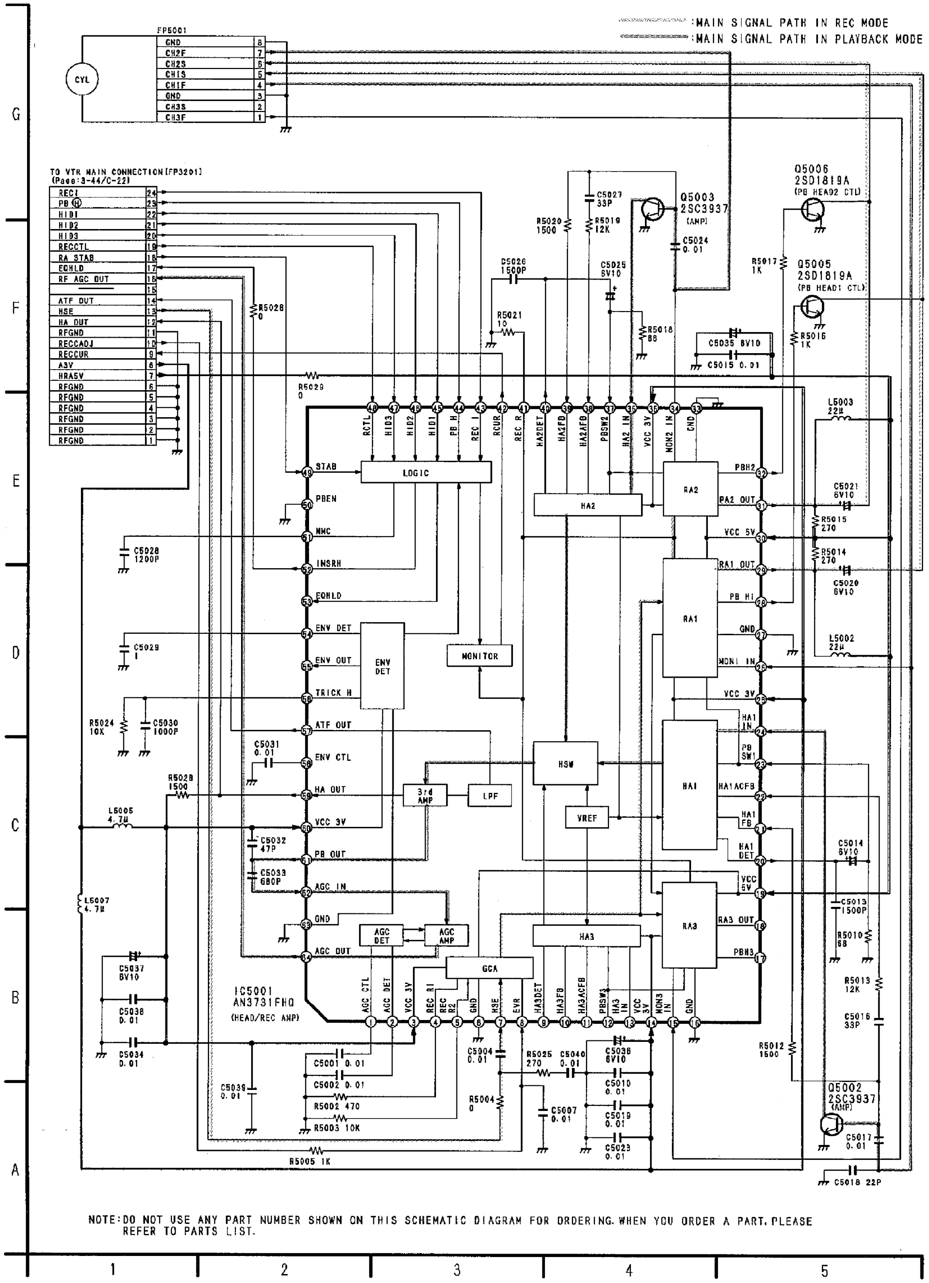
IC2207: BA6289F
(SHEMATIC DIAGRAM:Page 3-37/B-3)


GND
OUT2
VREF
R IN
DRIVER
TSD
POWER SAVE
CONTROL LOGIC
OUT1
VM
VCC
FIN

IC2201: TB6519FA
(SCHEMATIC DIAGRAM:Page 3-38/E-7)

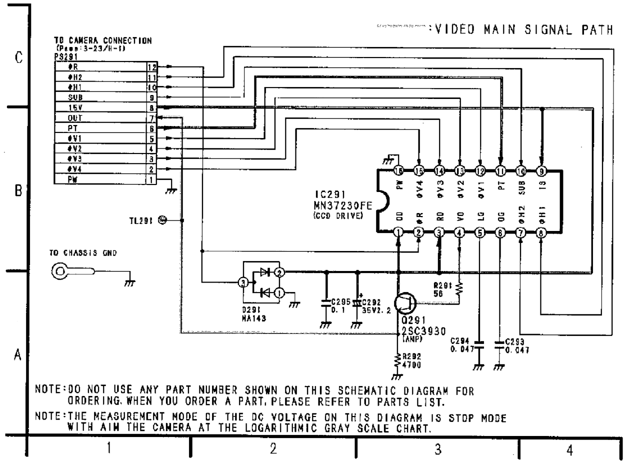

CEC
CECR
CTL
CPCI
CPCV
CPCS
CGND
CCS
CPCH
H1+
H1-
H2+
H2-
H3+
H3-
CVM
HOLE MATRIX
CRSF
RSF
LOGIC
DIRECTION DET
VM SHORT PROTECT
VM UNDER LIMIT
CM1
CSW
AMP (TSC)
CM2
YSW
AMP
UPPER SIDE VCE DETECTOR (VUS) (VLL)
CM3
GSW
VUL
LOWER SIDE VCE DETECTOR (VLS)
CU3
FC
FC-COP
ABSOLUTE VALUE
1/12
MODULATION
PCV AMP
(VLL)
CU2
VCC
VLL
VUL
TSC
VIS
VUS
UPPER SIDE DISTRIBUTOR
AMP
CU1
YCLK
SHAPING
DIRECTION CHANGEOVER
CL1
YT1
LOWER SIDE DISTRIBUTOR
AMP
CL2
YSFS
MINIMUM
ADD
CL3
CFG
ABSOLUTE VALUE
YU3
YPG
PHASE CHANGEOVER LOGIC
SLOPE SHAPING
DISTRIBUTOR
AMP
YU2
YFG
YU1
GND
LOWER SIDE VCE DETECTOR
YL1
REF
VM LIMITER
TERMINAL VOLTAGE COMPARATOR
YL2
YPG OUT
EDGE DET
YL3
YPG IN
UPPER SIDE VCE DETECTOR
YM1
YFG OUT
YFG IN
CFG OUT
CFG IN (H:STOP L:START)
YSTB
YSUL
YEC
YECR
YPCI
YPCV
YPCS
YGND
YCS
YVM
YM3
YM2

3-13. HEADAMP SCHEMATIC DIAGRAM


:MAIN SIGNAL PATH IN REC MODE
:MAIN SIGNAL PATH IN PLAYBACK MODE
FP5001
CYL
GND
CH2F
CH2S
CH1S
CH1F
GND
CH3S
CH3F
TO VTR MAIN CONNECTION (FP3201) (Page 3-44/C-22)
REC1
PB H
HID1
HID2
HID3
RECCTL
RA STAB
EGHLD
RF AGC OUT
ATF OUT
HSE
HA OUT
RFGND
RECCADJ
RECCUR
A3V
HRA5V
RFGND
Q5003
2SC3937
(AMP)
Q5006
2SD1819A
(PB HEAD2 CTL)
Q5005
2SD1819A
(PB HEAD1 CTL)
Q5002
2SC3937
(AMP)
IC5001
AN3731FHQ
(HEAD/REC AMP)
STAB
PBEN
MMC
INSRH
EGNLD
ENV DET
ENV OUT
TRICK H
ATF OUT
ENV CTL
HA OUT
VCC 3V
PB OUT
AGC IN
GND
AGC OUT
LOGIC
HA2
RA2
RA1
ENV DET
MONITOR
HSW
LPF
3rd AMP
VREF
HA1
AGC DET
AGC AMP
GCA
HA3
RA3
PBH2
RA2 OUT
VCC 5V
RA1 OUT
PB H1
GND
MON1 IN
VCC 3V
HA1 IN
PB SW1
HA1ACFB
HA1 FB
HA1 DET
VCC 5V
RA3 OUT
PBH3
G
F
E
D
C
B
A
1
2
3
4
5

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-12. CCD FLEX. CARD SCHEMATIC DIAGRAM



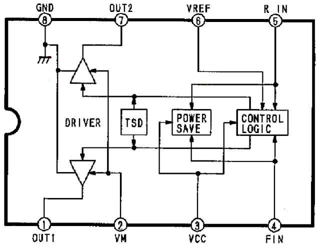
:VIDEO MAIN SIGNAL PATH
TO CAMERA CONNECTION (Page:3-23/H-1)
PS291
φR
φH2
φH1
SUB
15V
OUT
PT
φV1
φV2
φV3
φV4
PW
IC291
MN37230FE
(CCD DRIVE)
TL291
TO CHASSIS GND
D291
MA143
C295 0.1
C292 35V2.2
Q291
2SC3930
(AMP)
R291 56
R292 4700
C294 0.047
C293 0.047
C
B
A
1
2
3
4

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE LOGARITHMIC GRAY SCALE CHART.

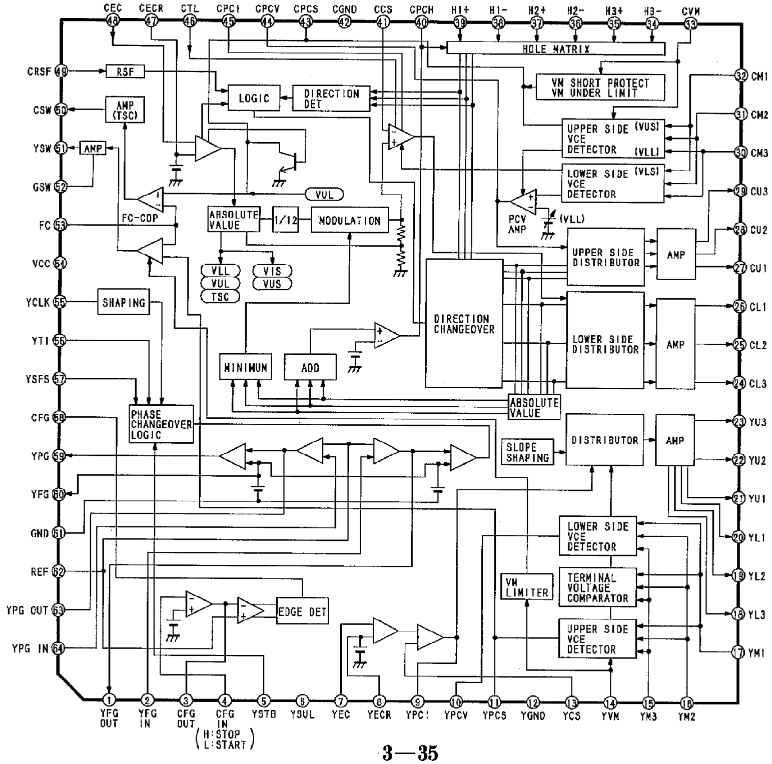
DRIVE IC BLOCK

IC2207: BA6289F
(SHEMATIC DIAGRAM:Page 3-37/B-3)



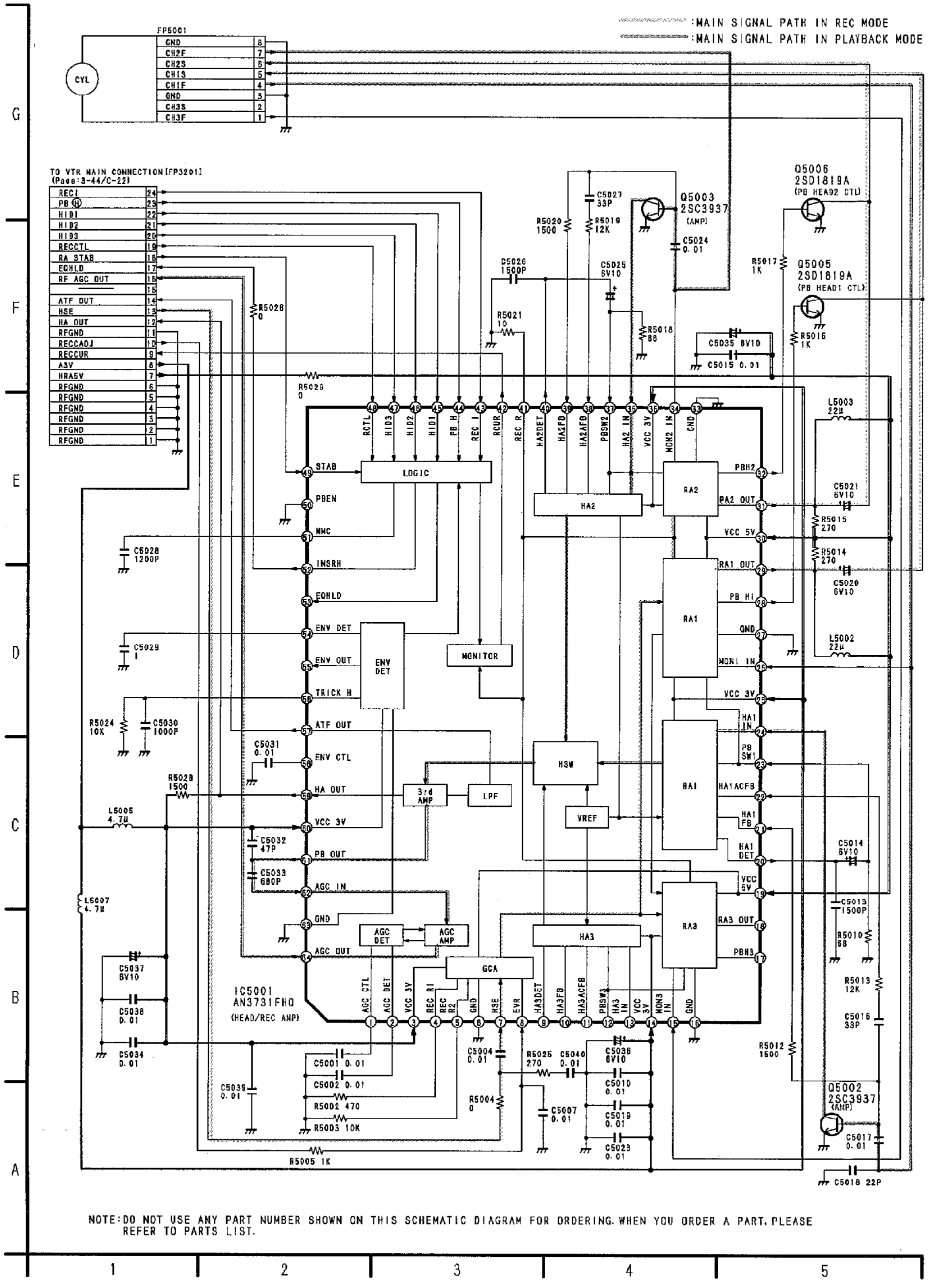
GND ⑧
OUT2 ⑦
VREF ⑥
R IN ⑤
DRIVER
TSD
POWER SAVE
CONTROL LOGIC
① OUT1
② VM
③ VCC
④ FIN

IC2201: TB6519FA
(SCHEMATIC DIAGRAM:Page 3-38/E-7)



CEC
CECR
CTL
CPCI
CPCV
CPCS
CGND
CCS
CPCH
H1+
H1-
H2+
H2-
H3+
H3-
CVM
HOLE MATRIX
VM SHORT PROTECT
VM UNDER LIMIT
LOGIC
DIRECTION DET
RSF
AMP (TSC)
AMP
FC-COP
VUL
ABSOLUTE VALUE
1/12
MODULATION
VLL
VUL
TSC
VIS
VUS
PCV AMP
(VLL)
UPPER SIDE VCE DETECTOR
(VUS)
(VLL)
LOWER SIDE VCE DETECTOR
(VLS)
UPPER SIDE DISTRIBUTOR
LOWER SIDE DISTRIBUTOR
DIRECTION CHANGEOVER
SHAPING
MINIMUM
ADD
ABSOLUTE VALUE
PHASE CHANGEOVER LOGIC
SLOPE SHAPING
DISTRIBUTOR
LOWER SIDE VCE DETECTOR
TERMINAL VOLTAGE COMPARATOR
VM LIMITER
UPPER SIDE VCE DETECTOR
EDGE DET
CRSF
CSW
YSW
GSW
FC
VCC
YCLK
YTI
YSFS
CFG
YPG
YFG
GND
REF
YPG OUT
YPG IN
CM1
CM2
CM3
CU3
CU2
CU1
CL1
CL2
CL3
YU3
YU2
YU1
YL1
YL2
YL3
YM1
YFG OUT
YFG IN
CFG OUT
CFG IN
YSTB
YSUL
YEC
YECR
YPCI
YPCV
YPCS
YGND
YCS
YVM
YM3
YM2
(H:STOP L:START)

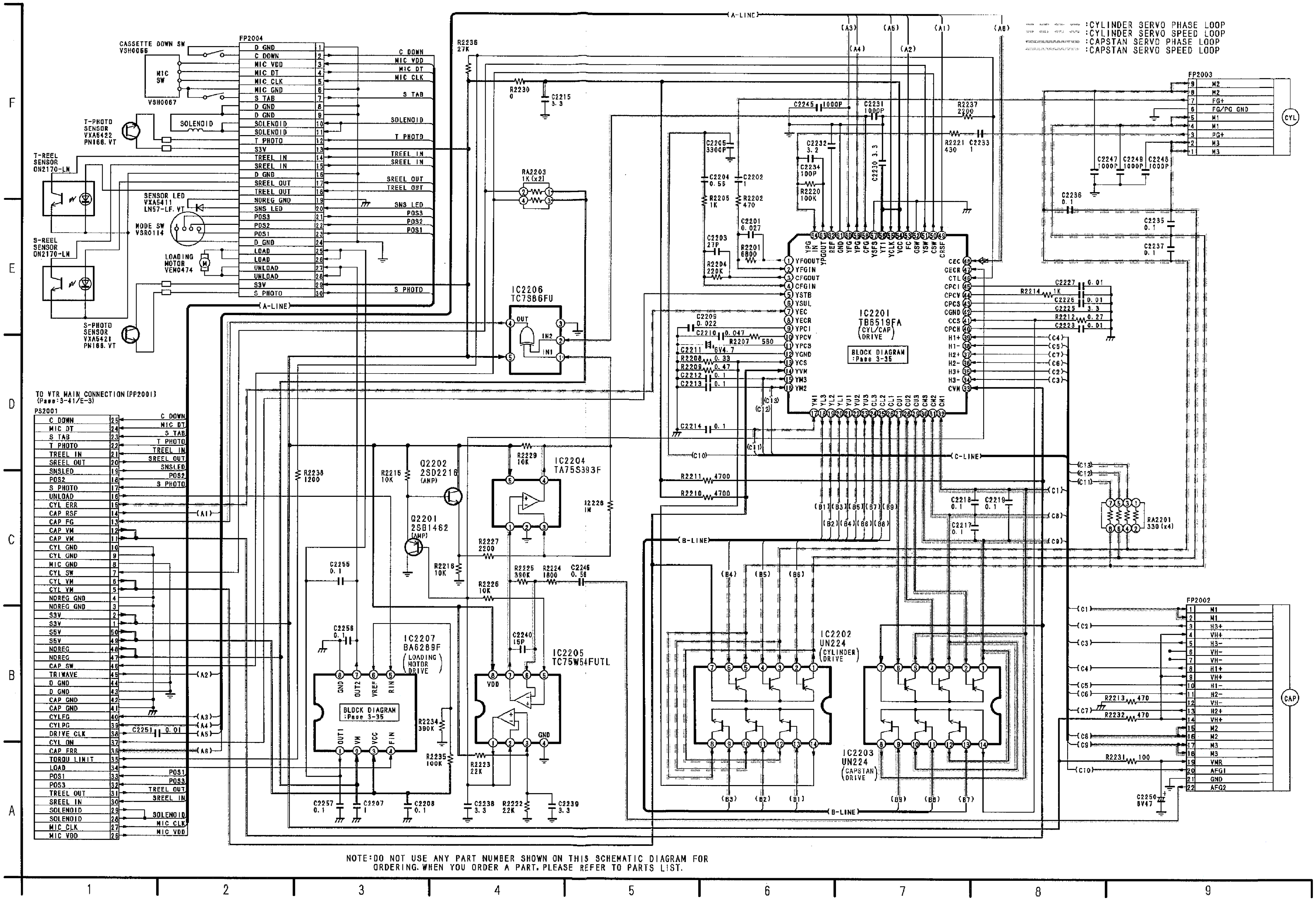
3-13. HEAD AMP SCHEMATIC DIAGRAM



:MAIN SIGNAL PATH IN REC MODE
:MAIN SIGNAL PATH IN PLAYBACK MODE
CYL
FP5001
GND
CH2F
CH2S
CH1S
CH1F
GND
CH3S
CH3F
TO VTR MAIN CONNECTION (FP3201) (Page:3-44/C-22)
REC1
PB H
HID1
HID2
HID3
RECCTL
RA STAB
ECHLD
RF AGC OUT
ATF OUT
HSE
HA OUT
RFGND
RECCADJ
RECCUR
A3V
HRA5V
Q5003
2SC3937
(AMP)
Q5006
2SD1819A
(PB HEAD2 CTL)
Q5005
2SD1819A
(PB HEAD1 CTL)
Q5002
2SC3937
(AMP)
IC5001
AN3731FHQ
(HEAD/REC AMP)
LOGIC
HA2
RA2
RA1
RA3
HA1
HA3
HSW
VREF
MONITOR
ENV DET
3rd AMP
LPF
AGC DET
AGC AMP
GCA
STAB
PBEN
MMC
INSRH
ECHLD
ENV DET
ENV OUT
TRICK H
ATF OUT
ENV CTL
HA OUT
VCC 3V
PB OUT
AGC IN
GND
AGC OUT
PBH2
RA2 OUT
VCC 5V
RA1 OUT
PB H1
GND
MON1 IN
VCC 3V
HA1 IN
PB SW1
HA1ACFB
HA1 FB
HA1 DET
VCC 5V
RA3 OUT
PBH3
R5020 1500
C5027 33P
R5019 12K
C5024 0.01
R5017 1K
C5026 1500P
C5025 6V10
R5021 10
R5018 68
C5035 6V10
C5015 0.01
R5016 1K
R5028 0
R5029 0
L5003 22μ
C5021 6V10
R5015 270
R5014 270
C5020 6V10
L5002 22μ
C5028 1200P
C5029 1
R5024 10K
C5030 1000P
C5031 0.01
R5028 1500
L5005 4.7μ
C5032 47P
C5033 680P
L5007 4.7μ
C5037 6V10
C5038 0.01
C5034 0.01
C5039 0.01
C5001 0.01
C5002 0.01
R5002 470
R5003 10K
R5005 1K
C5004 0.01
R5025 270
C5040 0.01
R5004 0
C5007 0.01
C5036 6V10
C5010 0.01
C5019 0.01
C5023 0.01
C5014 6V10
C5013 1500P
R5010 68
R5013 12K
C5016 33P
R5012 1500
C5017 0.01
C5018 22P
G
F
E
D
C
B
A
1
2
3
4
5

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

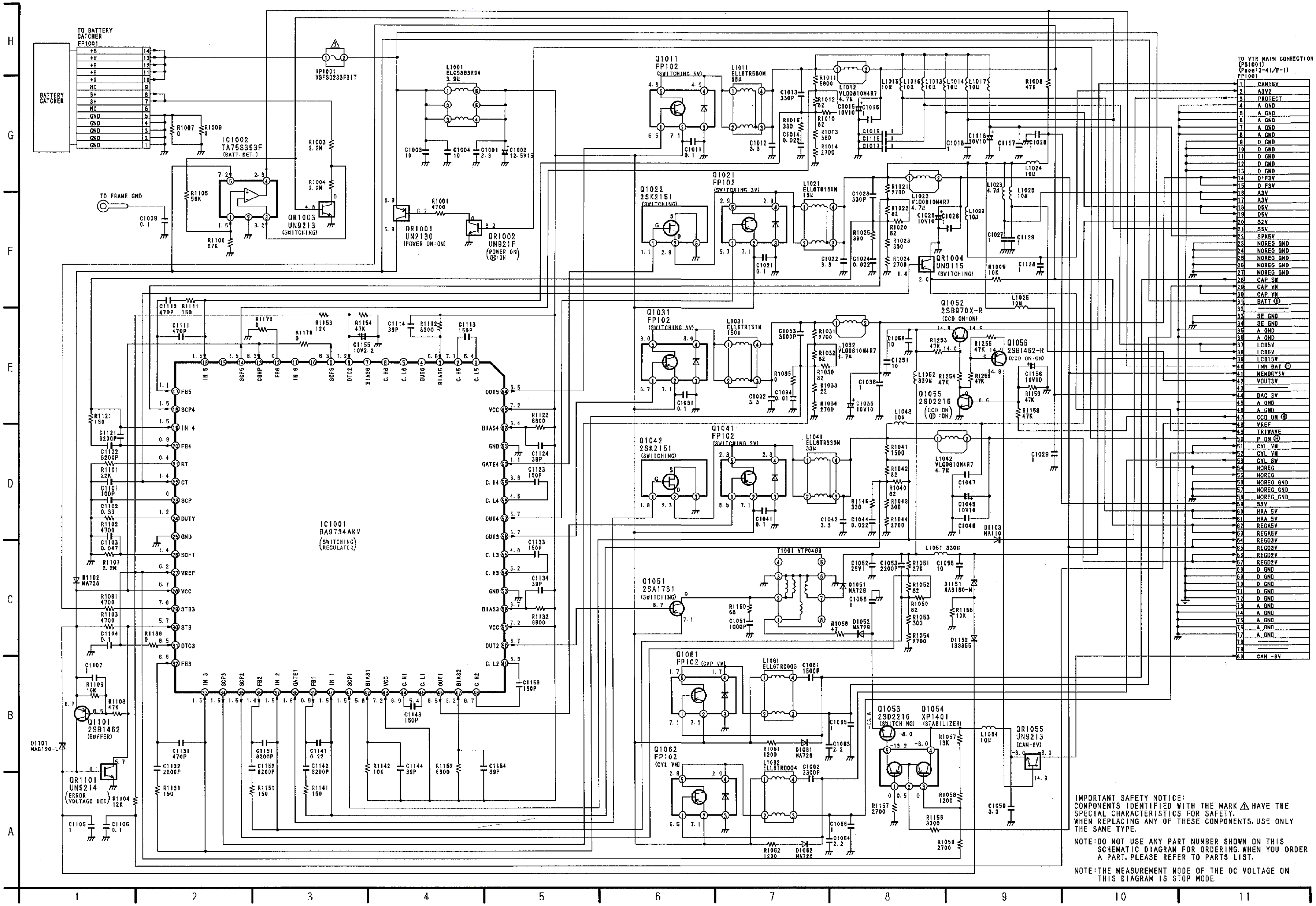
3-14. DRIVE SCHEMATIC DIAGRAM


:CYLINDER SERVO PHASE LOOP
:CYLINDER SERVO SPEED LOOP
:CAPSTAN SERVO PHASE LOOP
:CAPSTAN SERVO SPEED LOOP
CASSETTE DOWN SW VSH0066
MIC SW VSH0067
T-PHOTO SENSOR VXA5422 PN168.VT
T-REEL SENSOR ON2170-LN
S-REEL SENSOR ON2170-LN
SENSOR LED VXA5411 LN57-LF.VT
MODE SW VSR0114
LOADING MOTOR VEM0474
S-PHOTO SENSOR VXA5421 PN168.VT
SOLENOID
FP2004
D GND
C DOWN
MIC VDD
MIC DT
MIC CLK
MIC GND
S TAB
SOLENOID
T PHOTO
S3V
TREEL IN
SREEL IN
SREEL OUT
TREEL OUT
NOREG GND
SNS LED
POS3
POS2
POS1
LOAD
UNLOAD
S PHOTO
A-LINE
B-LINE
C-LINE
R2236 27K
R2230 0
C2215 3.3
RA2203 1K(x2)
IC2206 TC7S86FU
OUT IN2 IN1
IC2201 TB6519FA (CYL/CAP DRIVE)
BLOCK DIAGRAM :Page 3-35
YFGOUT YFGIN CFGOUT CFGIN YSTB YSUL YEC YECR YPCI YPCV YPCS YGND YCS YVM YM3 YM2
CEC CECR CTL CPCI CPCV CPCS CGND CCS CPCH H1+ H1- H2+ H2- H3+ H3- CVM
YM1 YL3 YL2 YL1 YU1 YU2 YU3 CL3 CL2 CL1 CU1 CU2 CU3 CM3 CM2 CM1
YPG IN YPGOUT REF GND YFG CPG CFG YSFS YT1 YCLK VCC FG CSW YSW CSW CRSF
C2245 1000P
C2231 1000P
R2237 2200
R2221 430
C2233 1
C2205 3300P
C2232 3.2
C2234 100P
C2230 3.3
R2220 100K
C2204 0.56
C2202 1
R2205 1K
R2202 470
C2201 0.027
C2203 27P
R2201 6800
R2204 220K
C2209 0.022
C2210 0.047
R2207 560
C2211 6V4.7
R2208 0.33
R2209 0.47
C2212 0.1
C2213 0.1
C2214 0.1
C2247 1000P
C2249 1000P
C2246 1000P
C2236 0.1
C2235 0.1
C2237 0.1
C2227 0.01
R2214 1K
C2226 0.01
C2225 3.3
R2212 0.27
C2223 0.01
FP2003
M2 M2 FG+ FG/PG GND M1 M1 PG+ M3 M3
CYL
TO VTR MAIN CONNECTION (FP2001) (Page:3-41/E-3)
PS2001
C DOWN MIC DT S TAB T PHOTO TREEL IN SREEL OUT SNSLED POS2 S PHOTO UNLOAD CYL ERR CAP RSF CAP FG CAP VM CAP VM CYL GND CYL GND MIC GND CYL SW CYL VM CYL VM NOREG GND NOREG GND S3V S3V S5V S5V NOREG NOREG CAP SW TRIWAVE D GND D GND CAP GND CAP GND CYLFG CYLPG DRIVE CLK CYL ON CAP FRR TORQU LIMIT LOAD POS1 POS3 TREEL OUT SREEL IN SOLENOID SOLENOID MIC CLK MIC VDD
R2238 1200
R2215 10K
Q2202 2SD2216 (AMP)
Q2201 2SB1462 (AMP)
R2229 10K
IC2204 TA75S393F
R2228 1M
R2211 4700
R2210 4700
R2227 2200
R2216 10K
R2225 390K
R2224 1800
C2248 0.56
R2226 10K
C2255 0.1
C2256 0.1
IC2207 BA6289F (LOADING MOTOR DRIVE)
GND OUT2 VREF RIN OUT1 VM VCC FIN
R2234 390K
R2235 100K
C2240 15P
IC2205 TC75W54FUTL
VDD GND
R2223 22K
C2251 0.01
C2257 0.1
C2207 1
C2208 0.1
C2238 3.3
R2222 22K
C2239 3.3
C2218 0.1
C2219 0.1
C2217 0.1
RA2201 330(x4)
IC2202 UN224 (CYLINDER DRIVE)
IC2203 UN224 (CAPSTAN DRIVE)
FP2002
M1 M1 H3+ VH+ H3- VH- H1+ VH+ H1- H2- VH- H2+ VH+ M2 M2 M3 M3 VMR AFG1 GND AFG2
R2213 470
R2232 470
R2231 100
C2250 6V47
CAP
F E D C B A
1 2 3 4 5 6 7 8 9

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
CCD FELX. CARD / HEAD AMP Section

3-15. POWER SCHEMATIC DIAGRAM

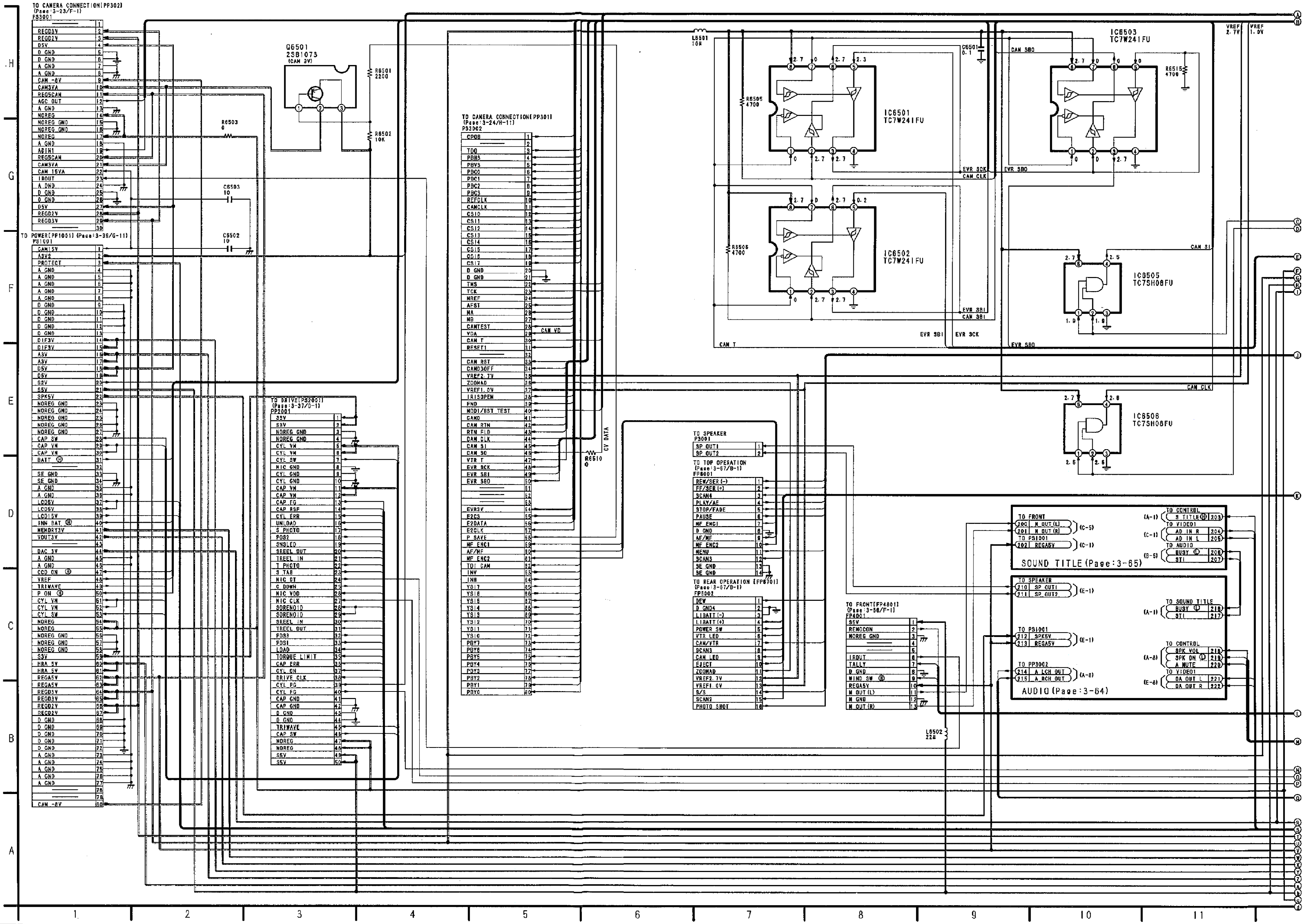

H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
TO BATTERY CATCHER
FP1001
BATTERY CATCHER
+B
S+
NC
GND
TO FRAME GND
C1009 0.1
IP1001 VSFS0233F31T
R1007 0
R1009 0
IC1002 TA75S393F (BATT. DET.)
R1105 56K
R1106 27K
R1003 2.2M
R1004 2.2M
QR1003 UN9213 (SWITCHING)
L1001 ELC5993R9N 3.9μ
C1003 10
C1004 10
C1001 3.3
C1002 12.5V15
R1001 4700
QR1001 UN2130 (POWER ON:ON)
QR1002 UN921F (POWER ON (H):ON)
Q1011 FP102 (SWITCHING 5V)
L1011 ELL8TR560M 56μ
C1013 330P
C1011 0.1
C1012 3.3
R1011 6800
R1012 82
R1016 330
C1014 0.022
R1010 82
R1013 360
R1014 2700
L1012 VLQ0810N4R7 4.7μ
C1015 10V10
C1016
L1015 10μ
L1016 10μ
L1013 10μ
L1014 10μ
L1017 10μ
C1019
C1115
C1017
C1018
C1118 10V10
C1117 1
C1028
R1008 47K
L1024 10μ
Q1022 2SK2151 (SWITCHING)
Q1021 FP102 (SWITCHING 3V)
L1021 ELL8TR150M 15μ
C1023 330P
C1021 0.1
C1022 3.3
C1024 0.022
R1021 2700
R1022 82
R1020 82
R1023 330
R1025 330
R1024 2700
L1022 VLQ0810N4R7 4.7μ
C1025 10V10
C1026
L1023 4.7μ
L1026 10μ
L1028 10μ
C1027 1
C1129 1
C1128 1
QR1004 UN9115 (SWITCHING)
R1006 10K
L1025 10μ
Q1031 FP102 (SWITCHING 3V)
L1031 ELL6TR151M 150μ
C1033 3300P
R1031 2700
L1032 VLQ0810N4R7 4.7μ
R1032 82
R1030 82
R1033 22
R1034 2700
R1035 0
C1031 0.1
C1032 3.3
C1034 0.01
C1036 1
C1035 10V10
C1058 10
C1251 10
Q1052 2SB970X-R (CCD ON:ON)
R1253 47K
R1255 47K
Q1056 2SB1462-R (CCD ON:ON)
L1052 330μ
R1254 47K
R1256 47K
C1156 10V10
R1159 47K
R1158 47K
Q1055 2SD2216 (CCD ON) (H):ON
L1043 10μ
Q1042 2SK2151 (SWITCHING)
Q1041 FP102 (SWITCHING 2V)
L1041 ELL6TR330M 33μ
R1041 1500
R1042 82
R1040 82
R1043 300
R1044 2700
R1145 330
C1041 0.1
C1042 3.3
C1044 0.022
L1042 VLQ0810N4R7 4.7μ
C1047 1
C1045 10V10
C1046 1
D1103 MA110
C1029 1
IC1001 BA9734AKV (SWITCHING REGULATOR)
C1112 470P
R1111 150
C1111 470P
R1178 0
R1179 0
R1153 12K
R1154 47K
C1155 10V2.2
C1114 39P
R1112 6200
C1113 150P
IN 5
SCP5
COMP
FB6
IN 6
SCP6
DTC2
BIAS6
C.H6
C.L6
OUT6
BIAS5
C.H5
C.L5
FB5
SCP4
IN 4
FB4
RT
CT
SCP
DUTY
GND
SOFT
VREF
VCC
STB3
STB
DTC3
FB3
OUT5
VCC
BIAS4
GND
GATE4
C.H4
C.L4
OUT4
OUT3
C.L3
C.H3
GND
BIAS3
VCC
OUT2
C.L2
IN 3
SCP3
SCP2
FB2
IN 2
GATE1
FB1
IN 1
SCP1
BIAS1
VCC
C.H1
C.L1
OUT1
BIAS2
C.H2
R1122 6800
C1124 39P
C1123 150P
C1133 150P
C1134 39P
R1132 6800
C1153 150P
R1121 150
C1121 8200P
C1122 8200P
R1101 22K
C1101 100P
C1102 0.33
R1102 4700
C1103 0.047
R1107 2.2M
D1102 MA728
R1081 4700
R1103 4700
C1104 0.1
R1136 0
C1107 1
R1109 10K
R1108 47K
Q1101 2SB1462 (BUFFER)
D1101 MA8120-L
QR1101 UN9214 (ERROR VOLTAGE DET)
R1104 12K
C1105 1
C1106 0.1
C1131 470P
C1132 2200P
R1131 150
C1151 8200P
C1152 8200P
R1151 150
C1141 0.22
C1142 8200P
R1141 150
C1143 150P
R1142 10K
C1144 39P
R1152 6800
C1154 39P
T1001 VTPC499
Q1051 2SA1731 (SWITCHING)
R1150 68
C1051 1000P
C1052 25V1
C1053 2200P
R1051 27K
D1051 MA729
C1056 1
R1052 82
R1050 82
R1053 300
R1054 2700
R1058 47
D1052 MA729
L1051 330μ
C1055 10
D1151 MA8180-M
R1155 10K
D1152 1SS355
Q1061 FP102 (CAP VM)
L1061 ELL6TRD003
C1061 1500P
C1065 1
C1063 2.2
R1061 1200
D1061 MA728
Q1062 FP102 (CYL VM)
L1062 ELL6TRD004
C1062 3300P
C1066 1
C1064 2.2
R1062 1200
D1062 MA728
Q1053 2SD2216 (SWITCHING)
Q1054 XP1401 (STABILIZER)
R1057 13K
R1157 2700
R1058 1200
R1156 3300
R1059 2700
L1054 10μ
QR1055 UN9213 (CAM-8V)
C1059 3.3
TO VTR MAIN CONNECTION [PS1001] (Page:3-41/F-1)
PP1001
1 CAM15V
2 A3V2
3 PROTECT
4 A GND
5 A GND
6 A GND
7 A GND
8 A GND
9 D GND
10 D GND
11 D GND
12 D GND
13 D GND
14 DIF3V
15 DIF3V
16 A3V
17 A3V
18 D5V
19 D5V
20 S2V
21 S5V
22 SPK5V
23 NOREG GND
24 NOREG GND
25 NOREG GND
26 NOREG GND
27 NOREG GND
28 CAP SW
29 CAP VM
30 CAP VM
31 BATT (H)
32
33 SE GND
34 SE GND
35 A GND
36 A GND
37 LCD5V
38 LCD5V
39 LCD15V
40 INN BAT (H)
41 MEMORY3V
42 VOUT3V
43
44 DAC 3V
45 A GND
46 A GND
47 CCD ON (H)
48 VREF
49 TRIWAVE
50 P ON (H)
51 CYL VM
52 CYL VM
53 CYL SW
54 NOREG
55 NOREG
56 NOREG GND
57 NOREG GND
58 NOREG GND
59 S3V
60 HRA 5V
61 HRA 5V
62 REGA5V
63 REGA5V
64 REGD3V
65 REGD3V
66 REGD2V
67 REGD2V
68 D GND
69 D GND
70 D GND
71 D GND
72 D GND
73 A GND
74 A GND
75 A GND
76 A GND
77 A GND
78
79
80 CAM -8V

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

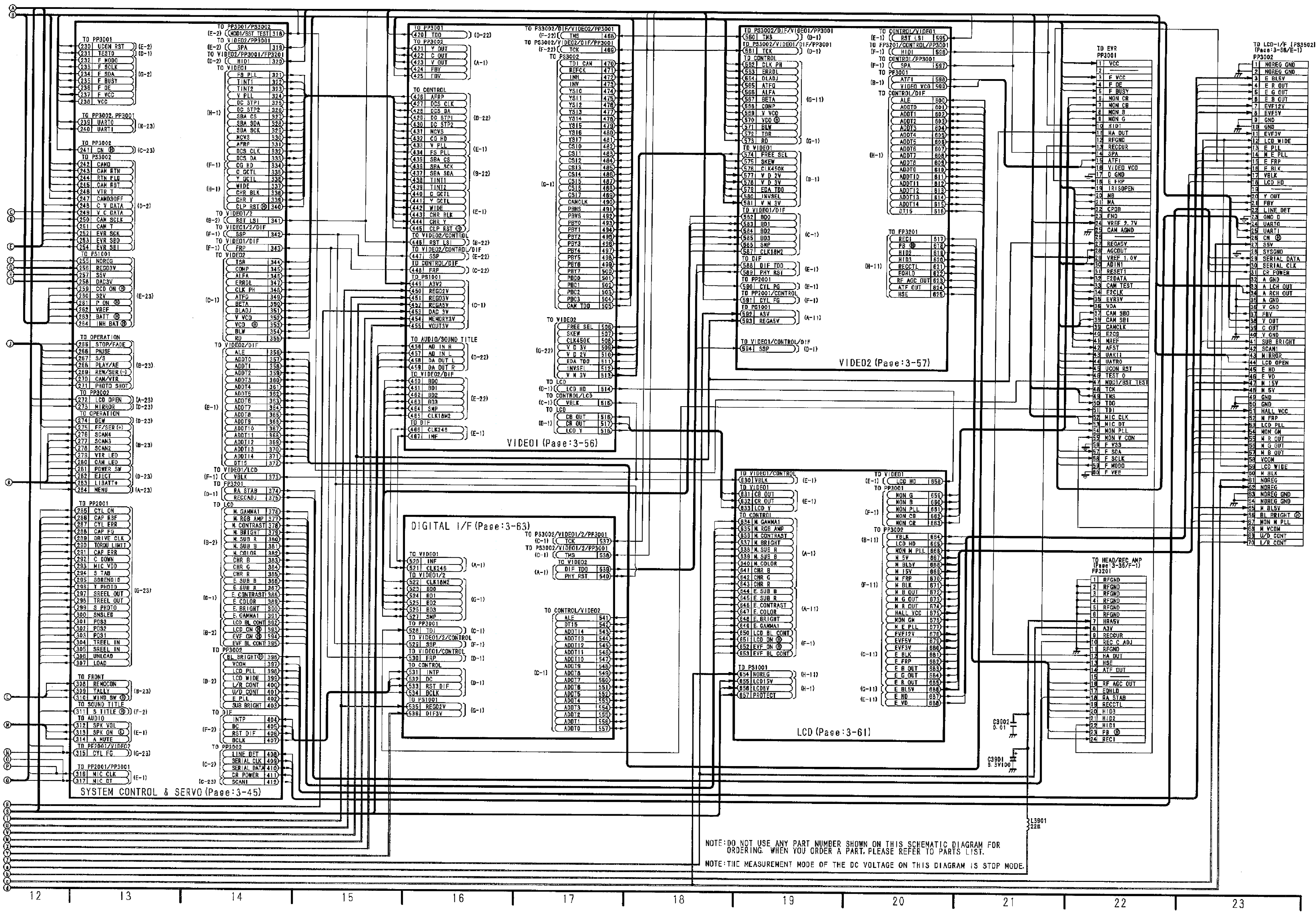
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

3-16. VTR MAIN CONNECTION SCHEMATIC DIAGRAM



TO CAMERA CONNECTION(PP302) (Page:3-23/F-1)
FS3001
TO POWER(PP1001) (Page:3-38/G-11)
FS1001
Q6501
2SB1073
(CAM 3V)
R6501 2200
R6502 10K
R6503 0
C6503 10
C6502 10
TO DRIVE(PS2001) (Page:3-37/D-1)
PP2001
TO CAMERA CONNECTION(PP301) (Page:3-24/H-11)
PS3002
CAM VD
CV DATA
R6510 0
L6501 10R
C6501 0.1
R6505 4700
R6506 4700
IC6501 TC7W241FU
IC6502 TC7W241FU
IC6503 TC7W241FU
R6515 4700
IC6505 TC7SH08FU
IC6506 TC7SH08FU
VREF 2.7V
VREF 1.8V
CAM SBO
EVR SCK
CAM CLK
EVR SBO
EVR SBI
CAM SBI
CAM SI
CAM T
TO SPEAKER P3001
TO TOP OPERATION (Page:3-67/B-1) FP6001
TO REAR OPERATION (FP6701) (Page:3-67/B-1) FP6002
TO FRONT(FP4801) (Page:3-66/F-1) FP4001
L6502 22R
TO FRONT
TO PS1001
SOUND TITLE(Page:3-65)
TO CONTROL
TO VIDEO1
TO AUDIO
TO SPEAKER
TO SOUND TITLE
TO PP3002
AUDIO(Page:3-64)
1 2 3 4 5 6 7 8 9 10 11
A B C D E F G H

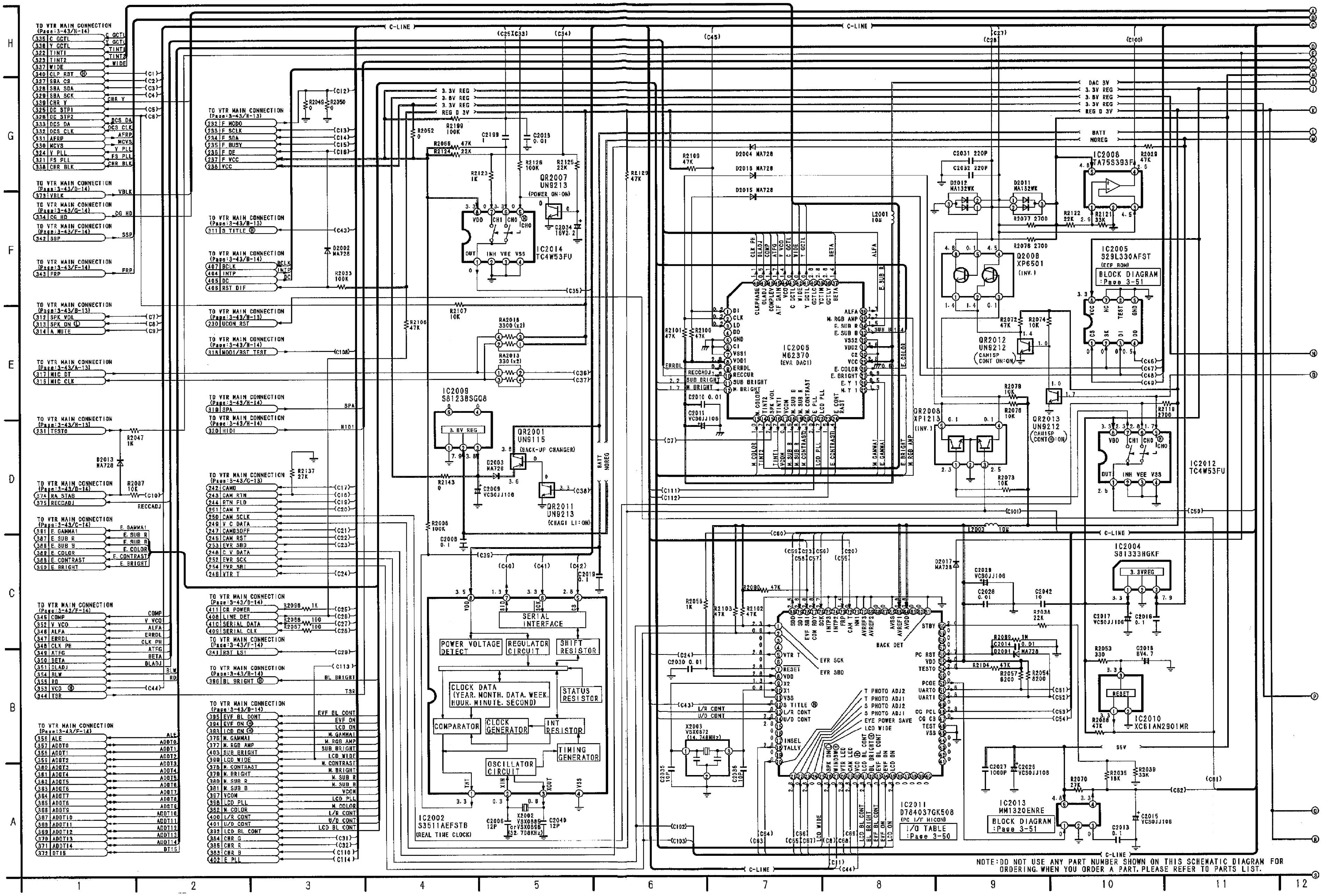
Back Page:
POWER Section


SYSTEM CONTROL & SERVO (Page:3-45)
VIDEO1 (Page:3-56)
DIGITAL I/F (Page:3-63)
VIDEO2 (Page:3-57)
LCD (Page:3-61)
TO EVR
PP3001
TO LCD-I/F (PS3502)
(Page:3-58/E-1)
PP3002
TO HEAD/REC AMP
(Page:3-35/F-1)
FP3201
C3902
0.01
C3901
3.3V100
L3901
22μ
12
13
14
15
16
17
18
19
20
21
22
23

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

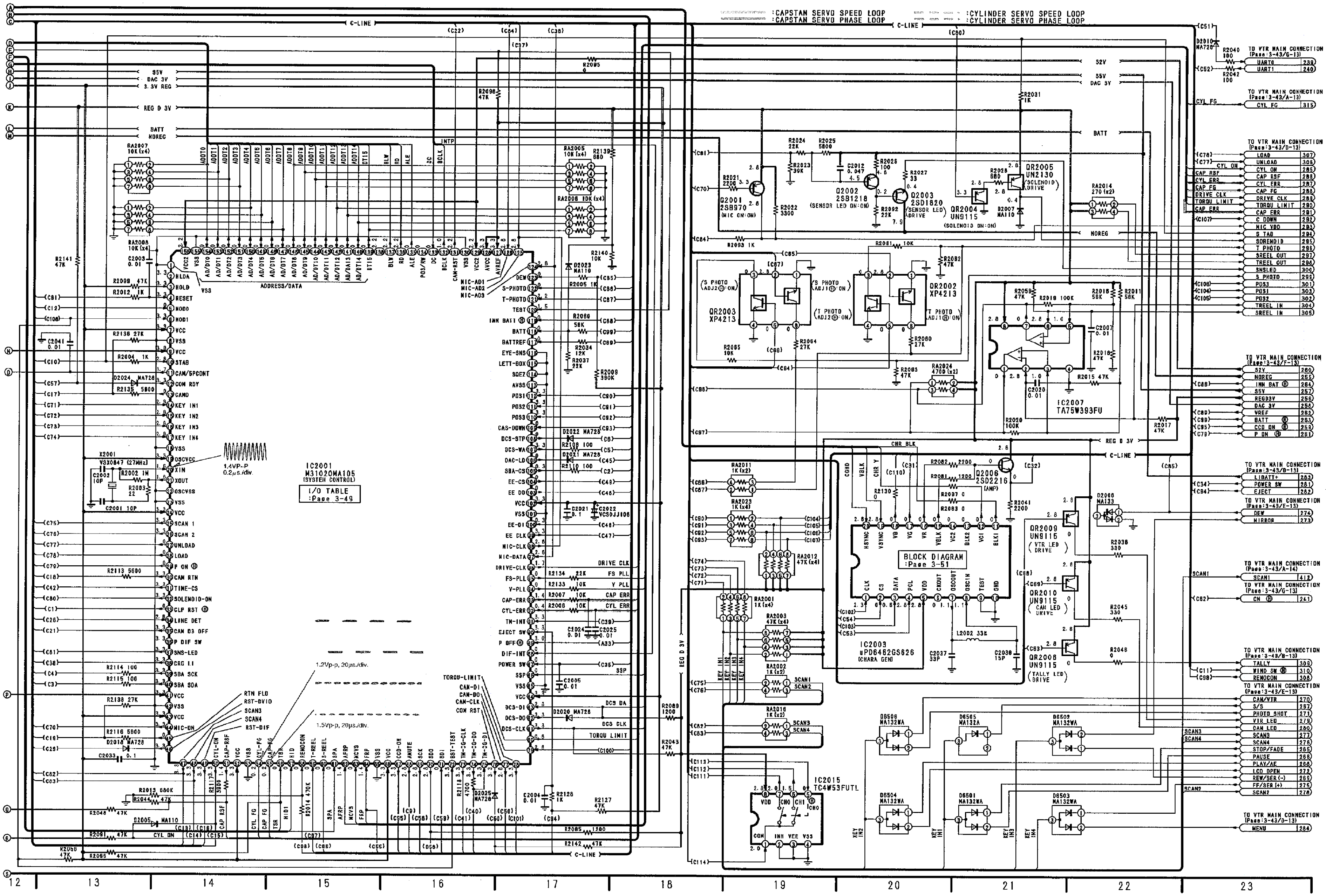
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

3-17. SYSTEM CONTROL & SERVO SCHEMATIC DIAGRAM


TO VTR MAIN CONNECTION
C-LINE
IC2014 TC4W53FU
QR2007 UN9213 (POWER ON:ON)
IC2009 S81238SGQ8
QR2001 UN9115 (BACK-UP CHANGER)
QR2011 UN9213 (CHAGI LI:ON)
IC2002 S3511AEFSTB (REAL TIME CLOCK)
SERIAL INTERFACE
POWER VOLTAGE DETECT
REGULATOR CIRCUIT
SHIFT RESISTOR
CLOCK DATA (YEAR, MONTH, DATA, WEEK, HOUR, MINUTE, SECOND)
STATUS RESISTOR
COMPARATOR
CLOCK GENERATOR
INT RESISTOR
TIMING GENERATOR
OSCILLATOR CIRCUIT
IC2006 M62370 (EVR DAC)
IC2008 TA75S393F
Q2008 XP6501 (INV.)
IC2005 S29L330AFST (EEP ROM)
BLOCK DIAGRAM :Page 3-51
QR2012 UN9212 (CAM15P CONT ON:ON)
QR2008 XP1213 (INV.)
QR2013 UN9212 (CAM15P CONT:ON)
IC2012 TC4W53FU
IC2004 S81333HGKF
IC2010 XC61AN2901MR
IC2011 D784037GK508 (PC I/F MICON)
I/O TABLE :Page 3-50
IC2013 MM1320ENRE
BLOCK DIAGRAM :Page 3-51
X2003 VSX6872 (14.748MHz)
X2002 VSX0585 (32.768KHz)
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

Back Page:
VTR MAIN CONNECTION Section


:CAPSTAN SERVO SPEED LOOP
:CAPSTAN SERVO PHASE LOOP
:CYLINDER SERVO SPEED LOOP
:CYLINDER SERVO PHASE LOOP
C-LINE
S5V
DAC 3V
3.3V REG
REG D 3V
BATT
NOREG
32V
IC2001
M31020MA105
(SYSTEM CONTROL)
I/O TABLE
:Page 3-49
ADDRESS/DATA
X2001
VSX0847 (27MHz)
1.4VP-P
0.2μs/div.
1.2Vp-p, 20μs/div.
1.5Vp-p, 20μs/div.
Q2001
2SB970
(MIC ON:ON)
Q2002
2SB1218
(SENSOR LED ON:ON)
Q2003
2SD1820
(SENSOR LED DRIVE)
QR2004
UN9115
(SOLENOID ON:ON)
QR2005
UN2130
(SOLENOID DRIVE)
QR2003
XP4213
QR2002
XP4213
(S PHOTO ADJ2 ON)
(S PHOTO ADJ1 ON)
(T PHOTO ADJ2 ON)
(T PHOTO ADJ1 ON)
IC2007
TA75W393FU
Q2006
2SD2216
(AMP)
IC2003
uPD6462GS626
(CHARA GEN)
BLOCK DIAGRAM
:Page 3-51
QR2009
UN9115
(VTR LED DRIVE)
QR2010
UN9115
(CAM LED DRIVE)
QR2008
UN9115
(TALLY LED DRIVE)
D2006
MA133
IC2015
TC4W53FUTL
D6506 MA132WA
D6505 MA132A
D6502 MA132WA
D6504 MA132WA
D6501 MA132WA
D6503 MA132WA
TO VTR MAIN CONNECTION
(Page:3-43/G-13)
UART0 239
UART1 240
TO VTR MAIN CONNECTION
(Page:3-43/A-13)
CYL FG 315
TO VTR MAIN CONNECTION
(Page:3-43/D-13)
LOAD 307
UNLOAD 308
CYL ON 285
CAP RSF 288
CYL ERR 287
CAP FG 286
DRIVE CLK 289
TORQU LIMIT 290
CAP ERR 291
C DOWN 292
MIC VDD 293
S TAB 294
SOREN0ID 295
T PHOTO 296
SREEL OUT 297
TREEL OUT 298
SNSLED 300
S PHOTO 299
POS3 301
POS1 303
POS2 302
TREEL IN 304
SREEL IN 305
TO VTR MAIN CONNECTION
(Page:3-43/F-13)
32V 260
NOREG 255
INH BAT 264
S5V 257
REGD3V 258
DAC 3V 256
VREF 262
BATT 263
CCD ON 259
P ON 261
TO VTR MAIN CONNECTION
(Page:3-43/B-13)
LIBATT+ 283
POWER SW 281
EJECT 282
TO VTR MAIN CONNECTION
(Page:3-43/E-13)
DEW 274
MIRROR 273
TO VTR MAIN CONNECTION
(Page:3-43/A-14)
SCAN1 412
TO VTR MAIN CONNECTION
(Page:3-43/G-13)
CN 241
TO VTR MAIN CONNECTION
(Page:3-43/B-13)
TALLY 309
WIND SW 310
REMOCON 306
TO VTR MAIN CONNECTION
(Page:3-43/E-13)
CAM/VTR 270
S/S 267
PHOTO SHOT 271
VTR LED 279
CAM LED 280
SCAN3 277
SCAN4 276
STOP/FADE 265
PAUSE 268
PLAY/AE 266
LCD OPEN 272
REW/SER(-) 265
FF/SER(+) 275
SCAN2 278
TO VTR MAIN CONNECTION
(Page:3-43/D-13)
MENU 284
12
13
14
15
16
17
18
19
20
21
22
23

SYSTEM CONTROL I/O TABLE

IC2001 (M31020MA105): SYSTEMCONTROL MICROCOMPUTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	Vss	—	GND	60	S REEL	I	Supply Reel Pulse
2	HLDA	O	EXT-Bus Hold Acknowledge/BST TCK (CLK)	61	SPA	I	
3	HOLD	I	EXT-Bus Hold Request	62	AFRP	I	
4	RESET	I	Reset	63	MCVS	I	
5	MOD0	I	Single Chip Mode=Vss Vss	64	FRP	I	Frame Reference Pulse
6	MOD1	I	Memory Extend Mode=Vss Vcc	65	Vss	—	GND
7	Vcc	—	Voltage	66	Vcc	—	Voltage
8	Vss	—	GND	67	CCD ON	O	Camera CCD On
9	Vcc	—	Voltage	68	AMUTE	O	
10	STAB	I	Safety Tab SW	69	SCLK3		
11	CAM/5PCONT	O	CAM/5P Select Signal	70	TXD 232C	O	232C/5P
12	COM RDY	O	RS-232C I/F Connect Timing	71	RXD 232C	I	232C/5P
13	CAMO	O		72	BST TEST	I	Boundary Scan Test SW
14	KEY IN1	I	Key Scan IN 1 /BST TD0 (data out)	73	TM CG CLK	O	Timer & Character Generator Serial Clock
15	KEY IN2	I	Key Scan IN 2 /BST TD1 (data in)	74	TM CG D0	O	Timer & Character Generator Serial Data Out
16	KEY IN3	I	Key Scan IN 3 /BST TMS (Test Mode Select)	75	TM CG D1	I	Timer & Character Generator Serial Data In
17	KEY IN4	I	Key Scan IN 4	76	COM RST	O	RS-232C I/F Reset
18	Vss	—	GND	77	CAM CLK	O	Camera Serial Clock
19	OSC Vcc	—	Voltage	78	CAM D0	O	Camera Serial Data Out
20	Xin	I	27MHz	79	CAM D1	I	Camera Serial Data In
21	Xout	O	27MHz	80	TORQU LIMIT	O	Capstan Torque Limit
22	OSC Vss	—	GND	81	DCS CLK	O	CAS & DVIO Serial Clock
23	Vss	—	GND	82	DCS D0	O	CAS & DVIO Serial Data Out
24	Vcc	—	Voltage	83	DCS DI	I	CAS & DVIO Serial Data In
25	SCAN 1	O	Key Scan Out 1	84	Vcc	—	Voltage
26	SCAN 2	O	Key Scan Out 2	85	Vss	—	GND
27	UNLOAD	O	Mecha Unload	86	SSP	I	Sector Start Pulse
28	LOAD	O	Mecha Load	87	POWER SW	I	Power SW
29	PON H	O	Power On Control	88	DIF INT	I	
30	CAM RTN	O	H: CAM 4.5MHz L: DV 1027MHz	89	EXT P ON H	I	Camera Remote Control Power
31	TIME CS	O	Timer Chip Select	90	EJECT SW	I	Eject SW
32	SQL ON	O	Solenoid On	91	TM INT	I	Timer Interrupt Request
33	VCP DISP	O	Y CLP Discharge	92	CYL ERR	O	Cylinder Error
34	LIN DET	I	Line in Signal Detect	93	CAP ERR	O	Capstan Error
35	CAM D3 OFF	O	CAM Power Manage (18MHz Power Control) H: ON	94	V PLL	O	Video PLL
36	P DIF SW	O	DIF Power Manage	95	FS PLL	O	FS PLL (ATF ERR for Linear Arrangement)
37	SNS LED	O	Tape Sensor LED	96	DRIVE CLK	O	Cylinder Drive Clock
38	CRG L1	O	Charge Clock Data Out ON/OFF	97	MIC DATA	I/O	MIC Data In/Out (12C)
39	SBA SCK	O	Sub Audio Serial	98	MIC CLK	O	MIC ON (MIC/Contact ID)
40	SBA SDA	O	Sub Audio Serial	99	EE CLK	O	EEPROM & DAC Clock
41	Vcc	—	Voltage	100	EE DI	I	EEPROM & DAC Data In
42	Vss	—	GND	101	Vss	—	GND
43	Vcc	—	Voltage	102	Vcc	—	Voltage
44	MID ON	O	MIC ON (MIC/Contact ID)	103	EE DO	O	EEPROM & DAC Data Out
45	RTN FLD	O	Field Detect	104	EE DS	O	EEPROM Chip Select
46	RST DVIO	O	DV10, CAS, EDA Reset	105	SBA CS	O	Sub Audio Chip Select
47	SCAN 3	O	Key Scan Out 3	106	DAC LD	O	DAC Load
48	SCAN 4	O	Key Scan Out 4	107	DCS WA	O	DCS Serial Start
49	RST DIF	O	DIF LSI Reset	108	DCS STP	O	DCS Serial Stop
50	CYL ON	O	Cylinder On	109	CAP DWN	I	Cassette Down SW
51	CAP RSF	O	Capstan On	110	POS3	I	Mecha Position SW3
52	Vcc	—	Voltage	111	POS2	I	Mecha Position SW2
53	Vss	—	GND	112	POS1	I	Mecha Position SW1
54	CYL FG	I	Cylinder FG	113	AVss	—	GND
55	CAP FG	I	Capstan FG	114	SQEZ	I	SQEZ
56	TSR	I	Track Start Referene	115	LETT BOX	I	Letter Box Detect
57	HID	I	HSW	116	EVE SNS	I	Eye Sensor Detect
58	REMODON	I	Remote Control Pulse	117	Vref	I	Battery Reference
59	T REEL	I	Take Up Reel Pulse	118	BATT H	I	Battery Voltage Detect
119	INN BATT H	I	INN. BATT/EXT. BATT Detect	138	BHW	O	
120	TEST0	I	Test SW	139	DT15	I/O	EXT-Memory Address/Data BUS
121	DEW	I	Dew Detect	140	ADDT14	I/O	EXT-Memory Address/Data BUS
122	T PHOT	I	Tape Take-up Photo Sensor Detect	141	ADDT13	I/O	EXT-Memory Address/Data BUS
123	S PHOT	I	Tape Supply Photo Sensor Detect	142	ADDT12	I/O	EXT-Memory Address/Data BUS
124	MIC AD3	I	Contact ID Detect 3	143	ADDT11	I/O	EXT-Memory Address/Data BUS
125	MIC AD2	I	Contact ID Detect 2	144	ADDT10	I/O	EXT-Memory Address/Data BUS
126	MIC AD1	I	Contact ID Detect 1	145	ADDT9	I/O	EXT-Memory Address/Data BUS
127	Avref			146	ADDT8	I/O	EXT-Memory Address/Data BUS
128	AVcc	—	Voltage	147	ADDT7	I/O	EXT-Memory Address/Data BUS
129	Vcc2	—	Voltage	148	ADDT6	I/O	EXT-Memory Address/Data BUS
130	Vss	—	GND	149	ADDT5	I/O	EXT-Memory Address/Data BUS
131	CAM RST	O	Camera Reset	150	ADDT4	I/O	EXT-Memory Address/Data BUS
132	BCLK	O		151	ADDT3	I/O	EXT-Memory Address/Data BUS
133	PINE	I	Data Complete for EXT-memory Mode	152	ADDT2	I/O	EXT-Memory Address/Data BUS
134	NC	O	(N.C.)	153	ADDT1	I/O	EXT-Memory Address/Data BUS
135	EDA, PINE	O	Address Latch Enable for EXT-Memory Mode	154	ADDT0	I/O	EXT-Memory Address/Data BUS
136	EDA	O	Read Strobe for EXT-Memory Mode	155	Vss	—	GND
137	EDA, PINE	O	Byte Low Write for EXT-Memory Mode	156	Vcc2	—	Voltage

Back Page:
SYSTEM CONTROL & SERVO Section

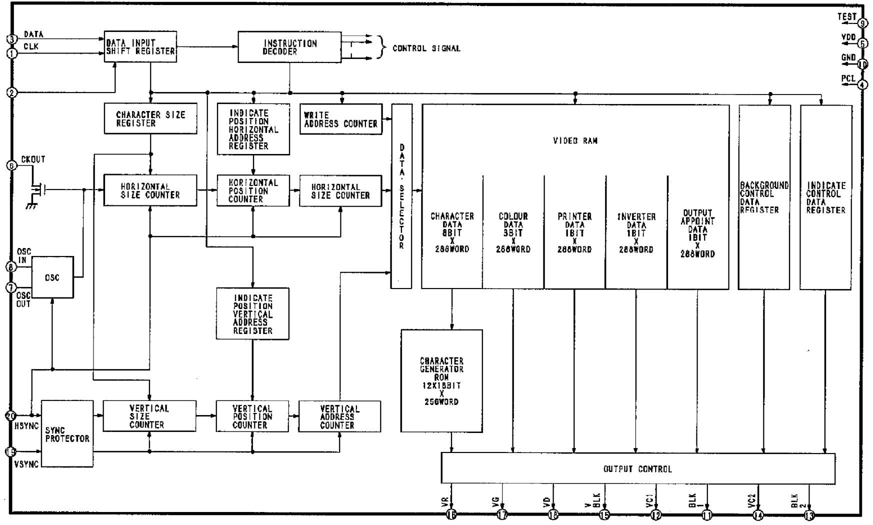
IC2011 (D784037GK508): RS-232C INTERFACE MICROCOMPUTER

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	EVR SCK	O	Serial Clock Signal for SYNC Serial Communication (To Camera Micom)
2	EVR SBO	O	Serial Data Signal for SYNC Serial Communication (To Camera Micom)
5	VTR T	O	SYNC Serial Communication Enable Signal for Camera Micom
7	RESET	I	Reset Signal
8	VDD	—	VDD (+3V)
9	X2	O	Oscillator (14.7456MHz)
10	X1	I	Oscillator (14.7456MHz)
11	GND	—	GND
12	S TITLE L	O	Sound Effect Control Signal
13	LR CONT	O	LCD Driver Control (L/R Invert)
14	UD CONT	O	LCD Driver Control (U/D Invert)
15	LCD P SAVE	—	(N.C.)
17	INSEL	—	(N.C.)
18	TALLY	O	TALLY LED Control
19	A LINE H	—	(N.C.)
20	T PH AD2	O	Take μ
21	T PH AD1	O	Take μ
22	S PH AD2	O	Supply Tape Sensor
23	S PH AD1	O	Supply Tape Sensor
24	EYE P SAVE	—	(N.C.)
25	LCD WIDE	O	LCD Driver Wide Select
26	SPK ON H	O	Speaker ON
27	WIDNSW H	O	Noise Silent
28	VTR LED	O	VTR Mode LED
29	CAM LED	O	CAMERA Mode LED
30	VCO H	O	VCO Test Mode Ⓗ
31	LCD BL CONT	O	LCD Back Light Control Signal
32	BL BRIGHT H	O	Back Light Bright Control Signal
33	EVF BL CONT	O	EVF Back Light Control Signal
34	EVF ON	O	EVF ON
35	LCD ON	O	LCD ON
44	CLKOUT	—	(N.C.)
45	GND	—	GND

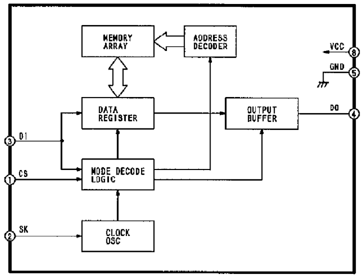
PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
46	TEST	—	GND
47	CGCS	O	CG CS
48	CGPCL	O	CG PCL
49	P12	—	(N.C.)
50	UARTI	I	RS-232C Data
51	UARTO	O	RS-232C Data
52	PCOE	O	RS-232C Driver Output Enable
53	BACK RST	—	(N.C.)
54	TEST0	I	VTR Test Signal (H: Normal, L: Test Mode)
55	VDD	—	VDD (+3V)
56	PC RST	I	Reset Signal Detect (AD Input)
60	STBY	I	RS-232C Cable Connect Confirm
61	BACK DET	—	GND
64	AVDD	—	Voltage for AD Converter (+3V)
65	AVREF1	—	Refference Voltage for AD Converter (+3V)
66	AVSS	—	GND for AD Converter
67	ANO0	—	(N.C.)
68	ANO1	—	(N.C.)
69	AVREF2	—	GND
70	AVREF3	—	GND
71	P20	—	GND
72	CAM T	I	Camera Service/232C Micom Select Signal (H: 232C, L: Camera Service)
73	FRP	I	Frame SYNC Signal
76	SCK	I	Serial Clock Signal for SYNC Serial Communication (To VTR Micom)
77	COM RDY	I	SYNC Serial Communication Enable Signal for VTR Micom
78	EVR SDI	I	Serial Data Input for SYNC Serial Communication (To Camera Micom)
79	SDI	I	Serial Data for SYNC Serial Communication (To VTR Micom)
80	SDO	O	Serial Data for SYNC Serial Communication (To VTR Micom)

SYSTEM CONTROL IC BLOCK

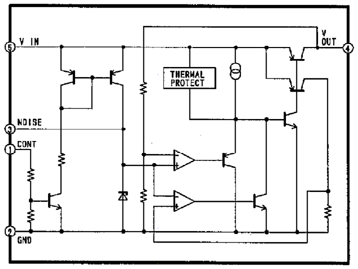
IC2003: uPD6462GS626
(SCHEMATIC DIAGRAM:Page 3-48/C-20)


DATA ③
CLK ①
②
DATA INPUT SHIFT REGISTER
INSTRUCTION DECODER
CONTROL SIGNAL
TEST ⑨
VDD ⑤
GND ⑩
PCL ④
CHARACTER SIZE REGISTER
INDICATE POSITION HORIZONTAL ADDRESS REGISTER
WRITE ADDRESS COUNTER
DATA·SELECTOR
VIDEO RAM
CKOUT ⑥
HORIZONTAL SIZE COUNTER
HORIZONTAL POSITION COUNTER
HORIZONTAL SIZE COUNTER
CHARACTER DATA 8BIT X 288WORD
COLOUR DATA 3BIT X 288WORD
PRINTER DATA 1BIT X 288WORD
INVERTER DATA 1BIT X 288WORD
OUTPUT APPOINT DATA 1BIT X 288WORD
BACKGROUND CONTROL DATA REGISTER
INDICATE CONTROL DATA REGISTER
OSC IN ⑧
OSC
OSC OUT ⑦
INDICATE POSITION VERTICAL ADDRESS REGISTER
CHARACTER GENERATOR ROM 12X18BIT X 256WORD
⑳ HSYNC
SYNC PROTECTOR
⑲ VSYNC
VERTICAL SIZE COUNTER
VERTICAL POSITION COUNTER
VERTICAL ADDRESS COUNTER
OUTPUT CONTROL
VR ⑯
VG ⑰
VD ⑱
V BLK ⑮
VC1 ⑫
BLK 1 ⑪
VC2 ⑭
BLK 2 ⑬

IC2005: S29L330AFST
(SCHEMATIC DIAGRAM:Page 3-46/E-10)

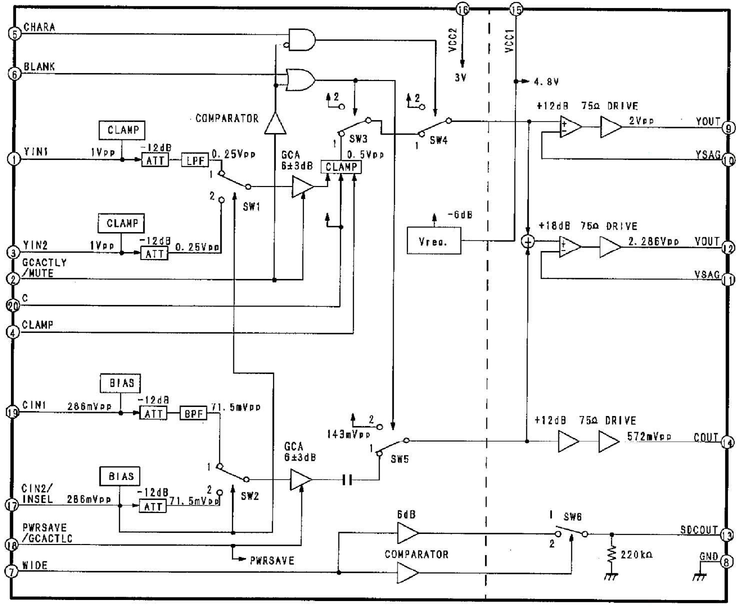

MEMORY ARRAY
ADDRESS DECODER
VCC ⑧
GND ⑤
DATA REGISTER
OUTPUT BUFFER
DO ④
DI ③
CS ①
MODE DECODE LOGIC
SK ②
CLOCK OSC

IC2013:MM1320ENRE
(SCHEMATIC DIAGRAM:Page 3-46/A-9)

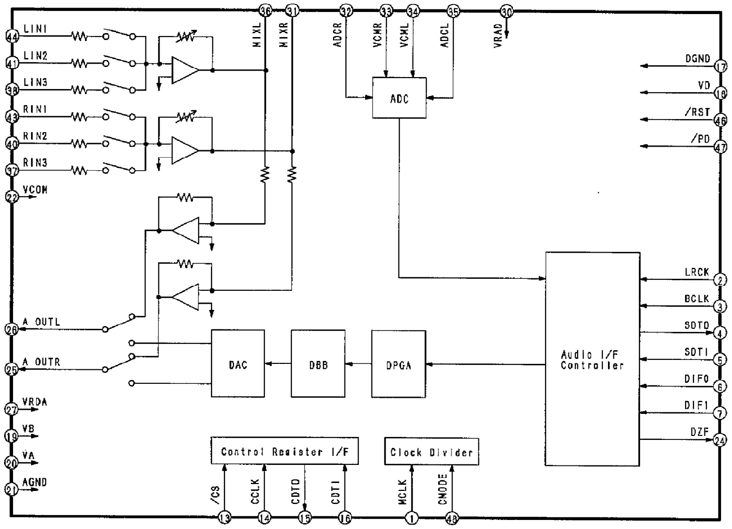

⑤ V IN
V OUT ④
THERMAL PROTECT
③ NOISE
① CONT
② GND

VIDEO 1 IC BLOCK

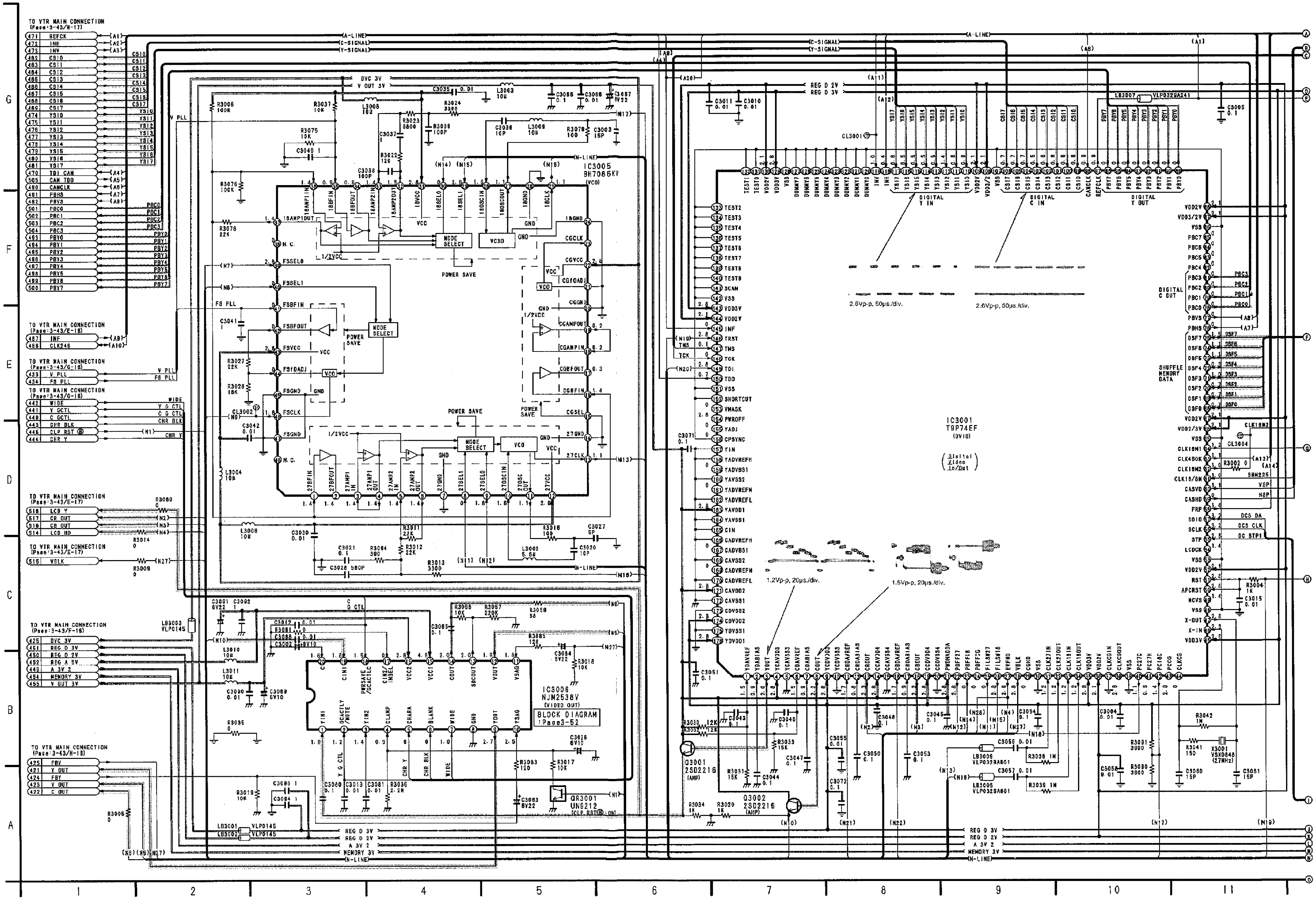
IC3006: NJM2538V
(SHEMATIC DIAGRAM:Page 3-53/B-5)


⑤ CHARA
⑥ BLANK
⑯ VCC2
3V
⑮ VCC1
4.8V
COMPARATOR
CLAMP
① YIN1
1Vpp
-12dB
ATT
LPF
0.25Vpp
SW1
GCA 6±3dB
CLAMP
0.5Vpp
SW3
SW4
+12dB 75Ω DRIVE
2Vpp
YOUT ⑨
YSAG ⑩
-6dB
Vreg.
③ YIN2
0.25Vpp
+18dB 75Ω DRIVE
2.286Vpp
VOUT ⑫
VSAG ⑪
② GCACTLY /MUTE
⑳ C
④ CLAMP
BIAS
⑲ CIN1
286mVpp
BPF
71.5mVpp
143mVpp
SW5
+12dB 75Ω DRIVE
572mVpp
COUT ⑭
⑰ CIN2/ INSEL
SW2
⑱ PWRSAVE /GCACTLC
PWRSAVE
6dB
COMPARATOR
SW6
SDCOUT ⑬
220kΩ
GND ⑧
⑦ WIDE

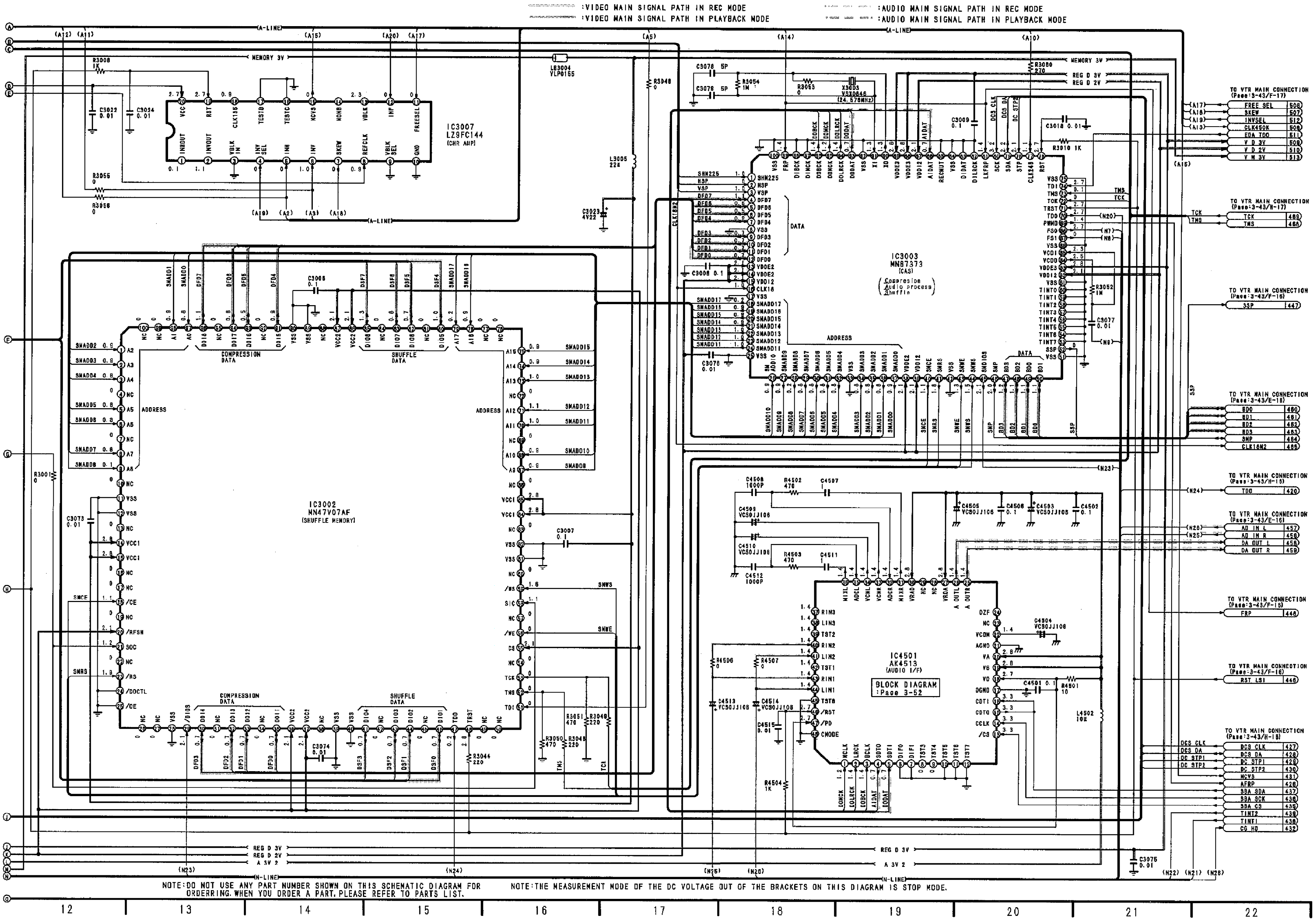
IC4501: AK4513
(SCHEMATIC DIAGRAM:Page 3-56/C-19)


LIN1 (44)
LIN2 (41)
LIN3 (38)
RIN1 (43)
RIN2 (40)
RIN3 (37)
VCOM ㉒
MIXL (36)
MIXR (31)
ADCR (32)
VCMR (33)
VCML (34)
ADCL (35)
VRAD (30)
ADC
DGND ⑰
VD ⑱
/RST (46)
/PD (47)
LRCK ②
BCLK ③
SDTO ④
SDTI ⑤
DIF0 ⑥
DIF1 ⑦
DZF ㉔
Audio I/F Controller
A OUTL ㉖
A OUTR ㉕
DAC
DBB
DPGA
VRDA ㉗
VB ⑲
VA ⑳
AGND ㉑
Control Register I/F
Clock Divider
/CS ⑬
CCLK ⑭
CDTO ⑮
CDTI ⑯
MCLK ①
CMODE (48)

3-18. VIDEO 1 SCHEMATIC DIAGRAM


TO VTR MAIN CONNECTION (Page 3-43/H-17)
TO VTR MAIN CONNECTION (Page 3-43/E-18)
TO VTR MAIN CONNECTION (Page 3-43/G-18)
TO VTR MAIN CONNECTION (Page 3-43/E-17)
TO VTR MAIN CONNECTION (Page 3-43/F-16)
TO VTR MAIN CONNECTION (Page 3-43/H-18)
IC3005 BH7086KV (VCO)
MODE SELECT
VCXO
VCO
POWER SAVE
IC3006 NJM2538V (VIDEO OUT)
BLOCK DIAGRAM : Page 3-52
IC3001 T9P74EF (DVIO)
(Digital Video In/Out)
DIGITAL Y IN
DIGITAL C IN
DIGITAL Y OUT
DIGITAL C OUT
SHUFFLE MEMORY DATA
2.6Vp-p, 50μs/div.
2.6Vp-p, 50μs/div.
1.2Vp-p, 20μs/div.
1.5Vp-p, 20μs/div.
Q3001 2SD2216 (AMP)
Q3002 2SD2216 (AMP)
QR3001 UN6212 (CLP RST)
X3001 VSX0848 (27MHz)
REG D 3V
REG D 2V
A 3V 2
MEMORY 3V
N-LINE
A-LINE
C-SIGNAL
Y-SIGNAL
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

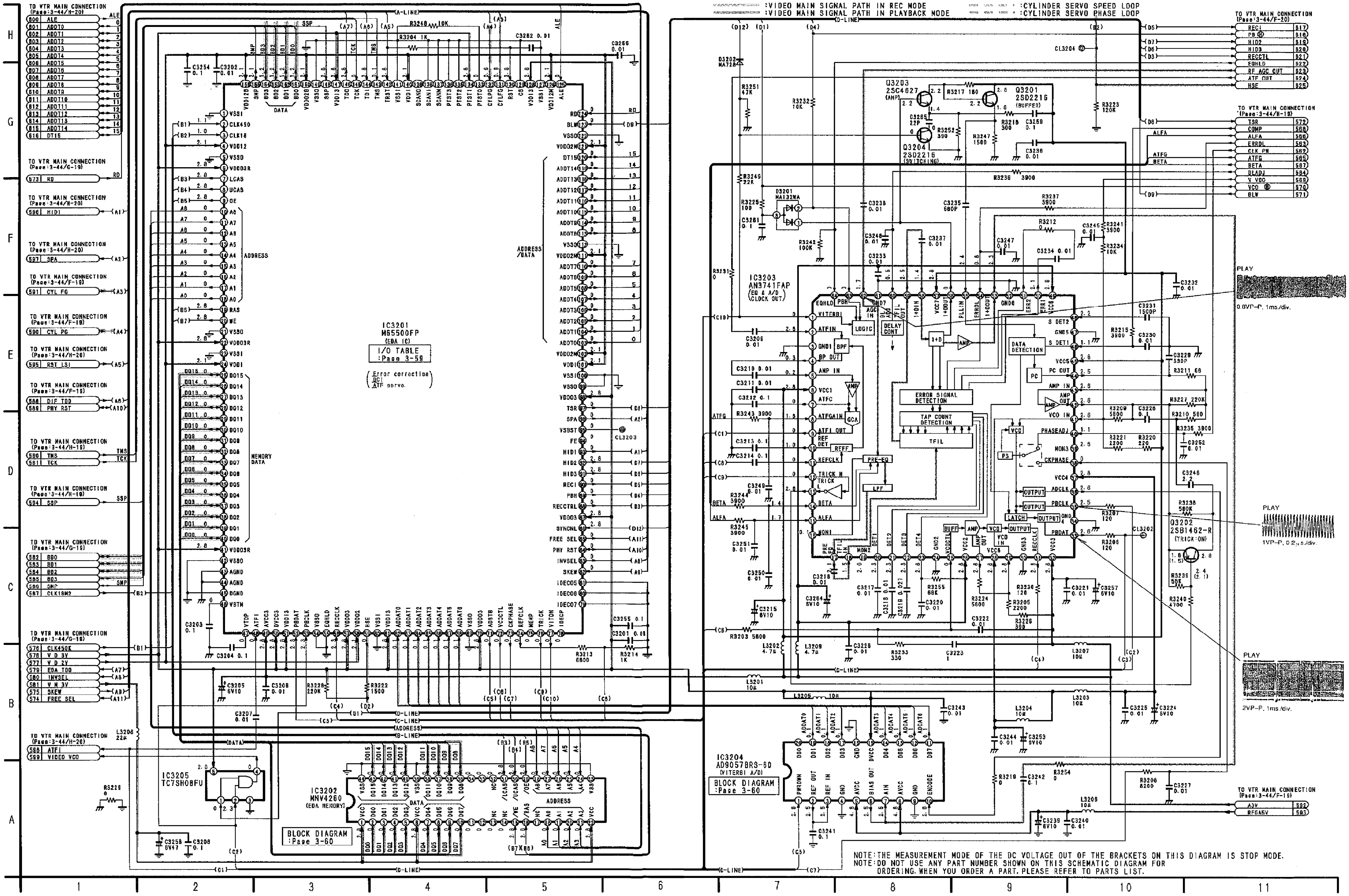
Back Page:
SYSTEM CONTROL & SERVO Section


:VIDEO MAIN SIGNAL PATH IN REC MODE
:VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
:AUDIO MAIN SIGNAL PATH IN REC MODE
:AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
(A-LINE)
MEMORY 3V
REG D 3V
REG D 2V
IC3007
LZ9FC144
(CHR AMP)
IC3002
MN47V07AF
(SHUFFLE MEMORY)
COMPRESSION DATA
SHUFFLE DATA
ADDRESS
IC3003
MN67373
(CAS)
Compression Audio process Shuffle
DATA
X3003
VSX0646
(24.576MHz)
IC4501
AK4513
(AUDIO I/F)
BLOCK DIAGRAM
:Page 3-52
TO VTR MAIN CONNECTION
(Page:3-43/F-17)
FREE SEL
SKEW
INVSEL
CLK450K
EDA TDO
V D 3V
V D 2V
V M 3V
TO VTR MAIN CONNECTION
(Page:3-43/H-17)
TCK
TMS
TO VTR MAIN CONNECTION
(Page:3-43/F-16)
SSP
TO VTR MAIN CONNECTION
(Page:3-43/E-16)
BD0
BD1
BD2
BD3
SMP
CLK16M2
TO VTR MAIN CONNECTION
(Page:3-43/H-15)
TDO
TO VTR MAIN CONNECTION
(Page:3-43/E-16)
AD IN L
AD IN R
DA OUT L
DA OUT R
TO VTR MAIN CONNECTION
(Page:3-43/F-15)
FRP
TO VTR MAIN CONNECTION
(Page:3-43/F-16)
RST LSI
TO VTR MAIN CONNECTION
(Page:3-43/H-18)
DCS CLK
DCS DA
DC STP1
DC STP2
MCVS
AFBP
SBA SDA
SBA SCK
SBA CS
TINT2
TINT1
CG HD
A 3V 2
(N-LINE)
12
13
14
15
16
17
18
19
20
21
22

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERRING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.

3-19. VIDEO 2 SCHEMATIC DIAGRAM



:VIDEO MAIN SIGNAL PATH IN REC MODE
:VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
:CYLINDER SERVO SPEED LOOP
:CYLINDER SERVO PHASE LOOP
TO VTR MAIN CONNECTION (Page:3-44/H-20)
TO VTR MAIN CONNECTION (Page:3-44/G-19)
TO VTR MAIN CONNECTION (Page:3-44/F-19)
TO VTR MAIN CONNECTION (Page:3-44/H-19)
IC3201 M65500FP (EDA IC)
I/O TABLE :Page 3-59
Error correction DC ATF servo
ADDRESS
MEMORY DATA
ADDRESS /DATA
DATA
IC3202 MNV4260 (EDA MEMORY)
BLOCK DIAGRAM :Page 3-60
IC3205 TC7SH08FU
IC3203 AN3741FAP (EQ & A/D) (CLOCK OUT)
IC3204 AD9057BRS-60 (VITERBI A/D)
BLOCK DIAGRAM :Page 3-60
Q3203 2SC4627 (AMP)
Q3201 2SD2216 (BUFFER)
Q3204 2SD2216 (SWITCHING)
Q3202 2SB1462-R (TRICK:ON)
D3201 MA132WA
D3202 MA728
ERROR SIGNAL DETECTION
TAP COUNT DETECTION
TFIL
DATA DETECTION
LOGIC
DELAY CONT
PRE-EQ
LPF
PLAY
0.8VP-P, 1ms/div.
PLAY
1VP-P, 0.2μs/div.
PLAY
2VP-P, 1ms/div.
D-LINE
A-LINE
B-LINE
C-LINE
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE.
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING.WHEN YOU ORDER A PART,PLEASE REFER TO PARTS LIST.

Back Page:
VIDEO 1 Section

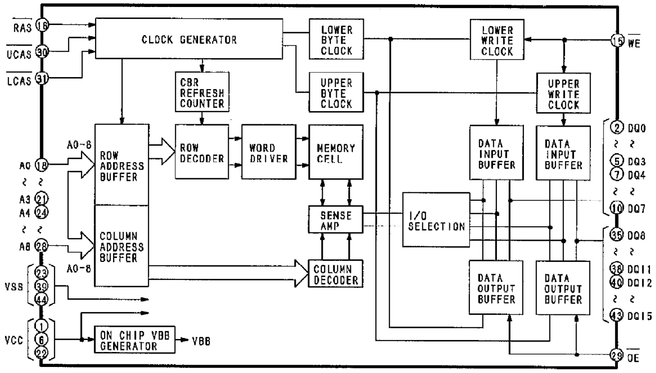
VIDEO 2 I/O TABLE

IC3201 (M65500FP): EDA

PIN. NO.	SIGNAL NAME	I/O	EXPLANATION	PIN. NO.	SIGNAL NAME	I/O	EXPLANATION
1	VSSI	—	VSS for Input Buffer & Inside Logic	57	VDDO3	—	VDD (3V) for Output Buffer
2	CLK450	I	Clock	58	VDDO2	—	VDD (2V) for Output Buffer
3	CLK18	I	Clock	59	HSE	O	
4	VDD12	—	VDD (2V) for Input & Inside Logic	60	VSSI	—	VSS for Input Buffer & Inside Logic
5	VSSO	—	VSS (Output Buffer)	61	VDDI3	—	VDD (3V) for Input Buffer
6	VDDO3R	—	VDD (Output Buffer)	62	ADDAT(0)	I	
7	LCAS	O	2/3V Select Correspond (DRAM I/F)	63	ADDAT(1)	I	
8	UCAS	O	2/3V Select Correspond (DRAM I/F)	64	ADDAT(2)	I	
9	OE	O	2/3V Select Correspond (DRAM I/F)	65	ADDAT(3)	I	
10	A(8)	O	2/3V Select Correspond (DRAM I/F)	66	ADDAT(4)	I	
11	A(7)	O	2/3V Select Correspond (DRAM I/F)	67	ADDAT(5)	I	
12	A(6)	O	2/3V Select Correspond (DRAM I/F)	68	ADDAT(6)	I	
13	A(5)	O	2/3V Select Correspond (DRAM I/F)	69	VSSO	—	(N.C.)
14	A(4)	O	2/3V Select Correspond (DRAM I/F)	70	VDDO3	—	(N.C.)
15	A(3)	O	2/3V Select Correspond (DRAM I/F)	71	ADSTB	O	
16	A(2)	O	2/3V Select Correspond (DRAM I/F)	72	VCOCTL	O	
17	A(1)	O	2/3V Select Correspond (DRAM I/F)	73	CKPHASE	O	
18	A(0)	O	2/3V Select Correspond (DRAM I/F)	74	REFCLK	O	
19	RAS	O	2/3V Select Correspond (DRAM I/F)	75	MEMP	—	(N.C.)
20	WE	O	2/3V Select Correspond (DRAM I/F)	76	TRICK	O	
21	VSSO	—	VSS for Output Buffer	77	VTTON	O	
22	VDDO3R	—	VDD for Output Buffer (DRAM I/F: 2/3V Select Correspond)	78	IDECP	—	(N.C.)
				79	IDECO(7)	I/O	
23	VSSI	—	VSS for Input Buffer & Inside Logic	80	IDECO(6)	I/O	
24	VDDI	—	VDD (2V) for Input & Inside Logic	81	IDECO(5)	I/O	
25	DQ(15)	I/O	2/3V Select Correspond (DRAM I/F)	82	IDECO(4)	I/O	
26	DQ(14)	I/O	2/3V Select Correspond (DRAM I/F)	83	IDECO(3)	I/O	
27	DQ(13)	I/O	2/3V Select Correspond (DRAM I/F)	84	IDECO(2)	I/O	
28	DQ(12)	I/O	2/3V Select Correspond (DRAM I/F)	85	IDECO(1)	I/O	
29	DQ(11)	I/O	2/3V Select Correspond (DRAM I/F)	86	IDECO(0)	I/O	
30	DQ(10)	I/O	2/3V Select Correspond (DRAM I/F)	87	VDDO3	—	VDD (3V) for Output Buffer
31	DQ(9)	I/O	2/3V Select Correspond (DRAM I/F)	88	RECCTRL	O	
32	DQ(8)	I/O	2/3V Select Correspond (DRAM I/F)	89	PBH	O	
33	DQ(7)	I/O	2/3V Select Correspond (DRAM I/F)	90	RECI	O	
34	DQ(6)	I/O	2/3V Select Correspond (DRAM I/F)	91	HID3	O	
35	DQ(5)	I/O	2/3V Select Correspond (DRAM I/F)	92	HID2	O	
36	DQ(4)	I/O	2/3V Select Correspond (DRAM I/F)	93	HID1	O	
37	DQ(3)	I/O	2/3V Select Correspond (DRAM I/F)	94	FE	—	(N.C.)
38	DQ(2)	I/O	2/3V Select Correspond (DRAM I/F)	95	VSBST	O	
39	DQ(1)	I/O	2/3V Select Correspond (DRAM I/F)	96	SPA	O	
40	DQ(0)	I/O	2/3V Select Correspond (DRAM I/F)	97	TSR	O	
41	VDDR3R	—	VDD for Output Buffer (DRAM I/F: 2/3V Select Correspond)	98	VDDO3	—	VDD (3V) for Output Buffer
				99	VSSO	—	VSS for Output Buffer
42	VSSO	—	VSS for Output Buffer	100	VSSI	—	VSS for Input Buffer & Inside Logic
43	AGND	—	Analogue GND	101	VDDI	—	VDD (2V) for Input & Inside Logic
44	AGND	—	Analogue GND	102	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)
45	DGND	—	Digital GND				
46	VBTM	—	Refference Analogue Voltage (BOTTOM)	103	ADDAT(0)	I/O	2/3V Select Correspond (MCU I/F)
				104	ADDAT(1)	I/O	2/3V Select Correspond (MCU I/F)
47	VTOP	—	Refference Analogue Voltage (TOP)	105	ADDAT(2)	I/O	2/3V Select Correspond (MCU I/F)
48	ATFI	I	Analogue Input (Vin: 1.0Vp-p)	106	ADDAT(3)	I/O	2/3V Select Correspond (MCU I/F)
49	AVCC3	—	Analogue VCC	107	ADDAT(4)	I/O	2/3V Select Correspond (MCU I/F)
50	DVCC3	—	Digital VCC	108	ADDAT(5)	I/O	2/3V Select Correspond (MCU I/F)
51	VDDI3	—	VDD (3V) for Low Amplitude Buffer	109	ADDAT(6)	I/O	2/3V Select Correspond (MCU I/F)
52	PBDAT	I	Low Amplitude Buffer	110	ADDAT(7)	I/O	2/3V Select Correspond (MCU I/F)
53	PBCLK	I	Low Amplitude Buffer	111	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)
54	VSSO	—	VSS for Low Amplitude				
55	EQHLD	I	Low Amplitude Buffer	112	VSSO	—	VSS for Output Buffer
56	RECCLK	I	Low Amplitude Buffer	113	ADDT(8)	I/O	2/3V Select Correspond (MCU I/F)
114	ADDT(9)	I/O	2/3V Select Correspond (MCU I/F)	138	SCANI	I	SCAN DATA Input
115	ADDT(10)	I/O	2/3V Select Correspond (MCU I/F)	139	SCANO	—	(N.C.)
116	ADDT(11)	I/O	2/3V Select Correspond (MCU I/F)	140	VDDI	—	VDD (2V) for Input & Inside Logic
117	ADDT(12)	I/O	2/3V Select Correspond (MCU I/F)	141	VSSI	—	VSS for Input Buffer & Inside Logic
118	ADDT(13)	I/O	2/3V Select Correspond (MCU I/F)	142	TRST	I	BSCAN Reset Input
119	ADDT(14)	I/O	2/3V Select Correspond (MCU I/F)	143	TMS	I	BSCAN Mode Input
120	DT(15)	I/O	2/3V Select Correspond (MCU I/F)	144	TDI	I	BSCAN Data Input
121	VDDO2M	—	VDD for Output Buffer (MCU I/F: 2/3V Select Correspond)	145	TCK	I	BSCAN Clock Input
				146	TDO	O	BSCAN Data Output
122	VSSO	—	VSS for Output Buffer	147	VDDI3	—	VDD (3V) for Input Buffer
123	BLW	I	2/3V Select Correspond (MCU I/F)	148	SSP	I	
124	RD	I	2/3V Select Correspond (MCU I/F)	149	VSSO	—	VSS for Output Buffer
125	ALE	I	2/3V Select Correspond (MCU I/F)	150	VSDDO2B	—	VDD for Output Buffer (DVC BUS: 2/3V Select Correspond)
126	VDDI2M	—	VDD for Input Buffer (MCU I/F: 2/3V Select Correspond)	151	BD(0)	I/O	2/3V Select Correspond (DVC BUS I/F)
127	VSSI	—	VSS for Input Buffer & Inside Logic				
128	VDDI3	—	VDD (3V) for Input Buffer	152	BD(1)	I/O	2/3V Select Correspond (DVC BUS I/F)
129	CS	I					
130	RST	I		153	BD(2)	I/O	2/3V Select Correspond (DVC BUS I/F)
131	CYLFG	I					
132	CYKLPG	I		154	BD(3)	I/O	2/3V Select Correspond (DVC BUS I/F)
133	PTST(0)	I	IC-Test Control				
134	PTST(1)	I	IC-Test Control	155	SMP	I/O	2/3V Select Correspond (DVC BUS I/F)
135	PTST(2)	I	IC-Test Control				
136	PTST(3)	I	IC-Test Control	156	VDDI2B	—	VDD for Input Buffer (DVC BUS: 2/3V Select Correspond)
137	SCANM	I	SCAN MODE Select				

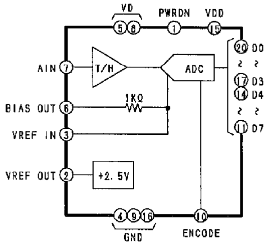
VIDEO 2 IC BLOCK

IC3202: MNV4260
(SCHEMATIC DIAGRAM:Page 3-57/A-3)



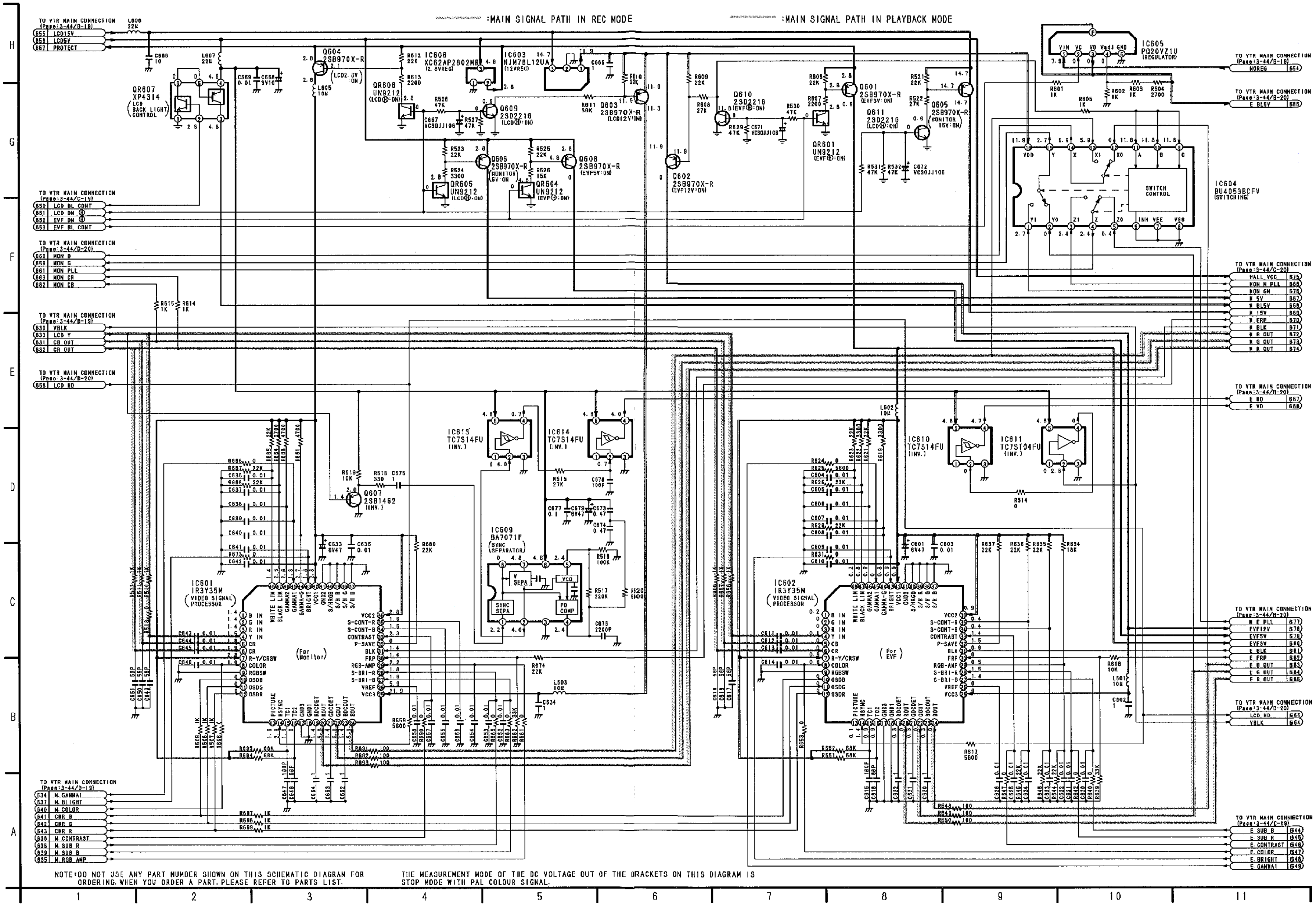
RAS 16
UCAS 30
LCAS 31
CLOCK GENERATOR
LOWER BYTE CLOCK
UPPER BYTE CLOCK
CBR REFRESH COUNTER
LOWER WRITE CLOCK
UPPER WRITE CLOCK
15 WE
A0-8
A0 18
A3 21
A4 24
A8 28
ROW ADDRESS BUFFER
ROW DECODER
WORD DRIVER
MEMORY CELL
DATA INPUT BUFFER
DATA INPUT BUFFER
2 DQ0
5 DQ3
7 DQ4
10 DQ7
SENSE AMP
I/O SELECTION
COLUMN ADDRESS BUFFER
A0-8
COLUMN DECODER
35 DQ8
38 DQ11
40 DQ12
43 DQ15
DATA OUTPUT BUFFER
DATA OUTPUT BUFFER
VSS 23 39 44
VCC 1 6 22
ON CHIP VBB GENERATOR
VBB
29 OE

IC3204: AD9057BRS-60
(SHEMATIC DIAGRAM:Page 3-58/A-7)



VD 5 8
PWRDN 1
VDD 15
AIN 7
T/H
ADC
20 D0
17 D3
14 D4
11 D7
1KΩ
BIAS OUT 6
VREF IN 3
VREF OUT 2
+2.5V
4 9 16
GND
10
ENCODE

3-20. LCD SCHEMATIC DIAGRAM

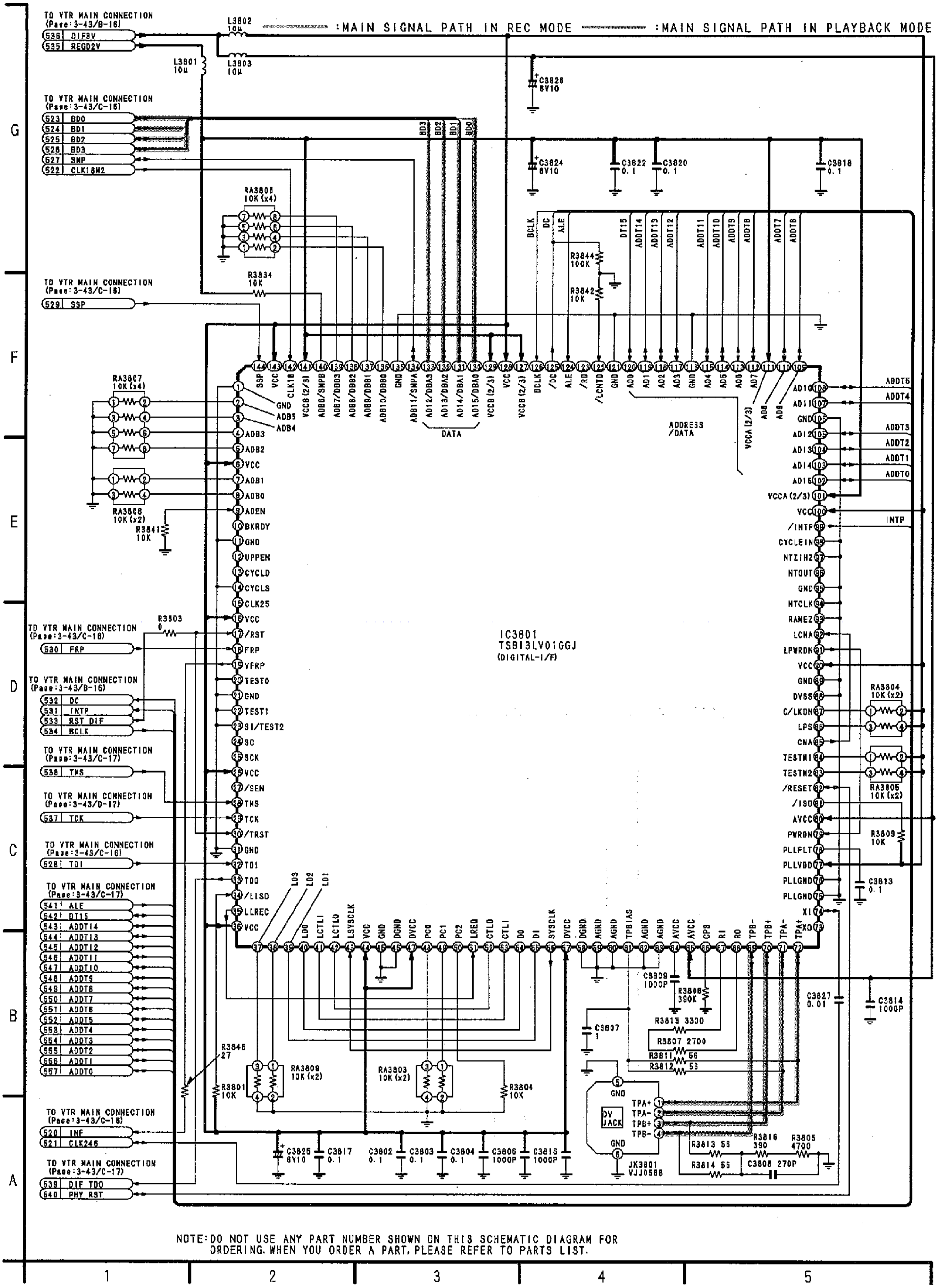

:MAIN SIGNAL PATH IN REC MODE
:MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION
LCD15V
LCD5V
PROTECT
LCD BL CONT
LCD ON
EVF ON
EVF BL CONT
MON B
MON G
MON PLL
MON CR
MON CB
VBLK
LCD Y
CB OUT
CR OUT
LCD HD
M. GAMMA1
M. BLIGHT
M. COLOR
CHR B
CHR G
CHR R
M. CONTRAST
M. SUB R
M. SUB B
M. RGB AMP
Q604 2SB970X-R
IC606 XC62AP2802MR
IC603 NJM78L12UA
QR607 XP4314 (LCD BACK LIGHT CONTROL)
QR606 UN9212
Q609 2SD2216
Q606 2SB970X-R
QR605 UN9212
QR604 UN9212
Q608 2SB970X-R
Q603 2SB970X-R
Q602 2SB970X-R
Q610 2SD2216
QR601 UN9212
Q601 2SB970X-R
Q611 2SD2216
Q605 2SB970X-R
IC605 PQ20VZ1U (REGULATOR)
IC604 BU4053BCFV (SWITCHING)
SWITCH CONTROL
IC613 TC7S14FU (INV.)
IC614 TC7S14FU (INV.)
IC609 BA7071F (SYNC SEPARATOR)
V SEPA
VCO
SYNC SEPA
PD COMP
Q607 2SB1462 (INV.)
IC601 IR3Y35M (VIDEO SIGNAL PROCESSOR)
(For Monitor)
IC602 IR3Y35M (VIDEO SIGNAL PROCESSOR)
(For EVF)
IC610 TC7S14FU (INV.)
IC611 TC7S04FU (INV.)
NOREG
E BL5V
HALL VCC
MON M PLL
MON GM
M 5V
M BL5V
M 15V
M FRP
M BLK
M B OUT
M G OUT
M R OUT
E HD
E VD
M E PLL
EVF12V
EVF5V
EVF3V
E BLK
E FRP
E B OUT
E G OUT
E R OUT
LCD HD
VBLK
E. SUB B
E. SUB R
E. CONTRAST
E. COLOR
E. BRIGHT
E. GAMMA1
1
2
3
4
5
6
7
8
9
10
11
H
G
F
E
D
C
B
A

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS STOP MODE WITH PAL COLOUR SIGNAL.

Back Page:
VIDEO 2 Section

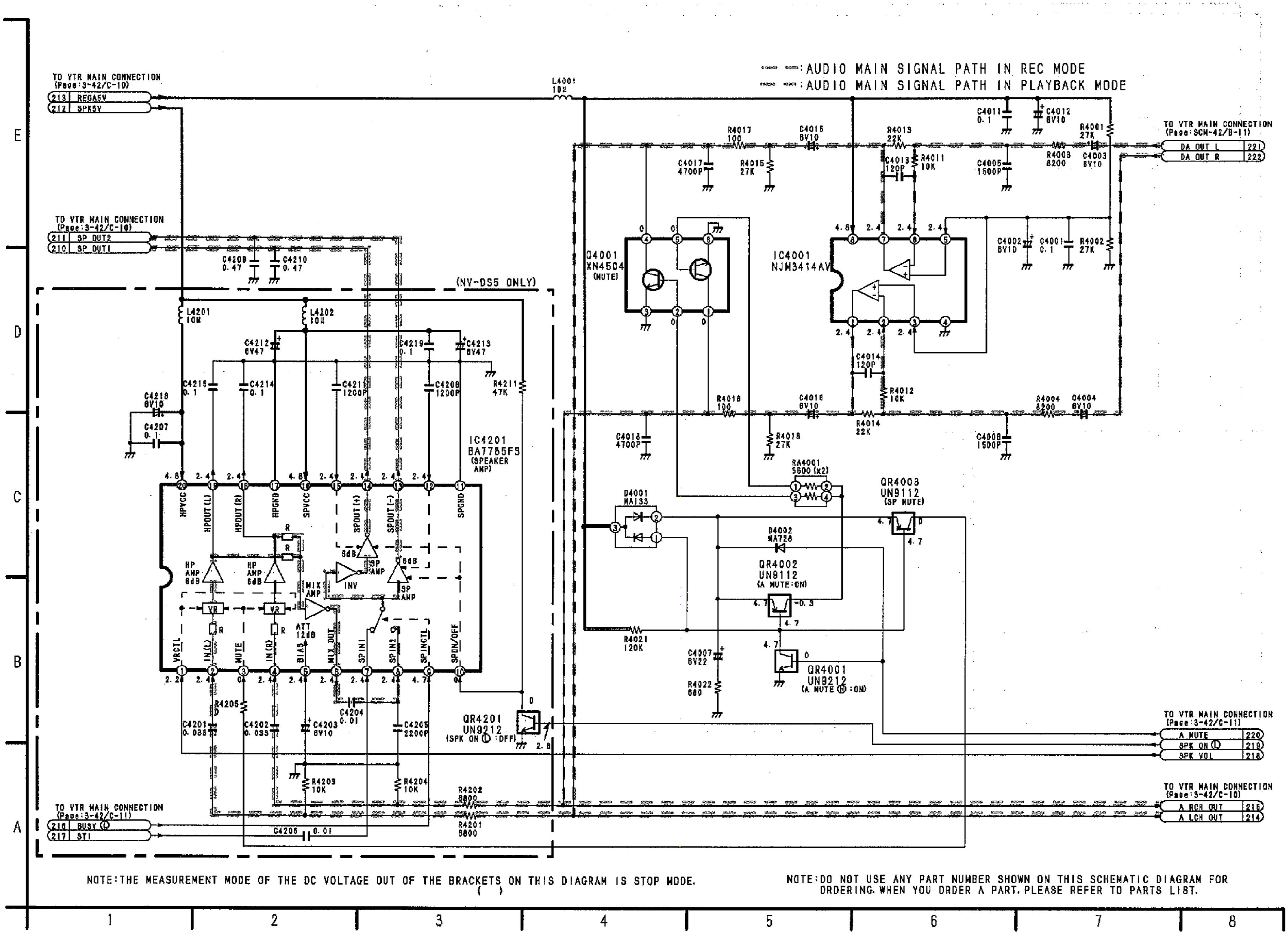
3-21. DIGITAL I/F SCHEMATIC DIAGRAM



:MAIN SIGNAL PATH IN REC MODE
:MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION (Page:3-43/B-16)
536 DIF3V
535 REGD2V
L3802 10μ
L3801 10μ
L3803 10μ
C3826 6V10
TO VTR MAIN CONNECTION (Page:3-43/C-16)
523 BD0
524 BD1
525 BD2
526 BD3
527 SNP
522 CLK18M2
BD3 BD2 BD1 BD0
C3824 6V10
C3822 0.1
C3820 0.1
C3818 0.1
RA3806 10K(x4)
BCLK DC ALE
R3844 100K
R3842 10K
DT15 ADDT14 ADDT13 ADDT12 ADDT11 ADDT10 ADDT9 ADDT8 ADDT7 ADDT6
R3834 10K
TO VTR MAIN CONNECTION (Page:3-43/C-16)
529 SSP
RA3807 10K(x4)
RA3808 10K(x2)
R3841 10K
SSP VCC CLK18 VCCB(2/3) ADB8/SNPB ADB7/DBB3 ADB6/DBB2 ADB9/DBB1 ADB10/DBB0 GND ADB11/SNPA AD12/DBA3 AD13/DBA2 AD14/DBA1 AD15/DBA0 VCCB(2/3) VCC VCCB(2/3) BCLK /DC ALE /RD /LCNTD GND AD0 AD1 AD2 AD3 GND AD4 AD5 AD6 AD7 VCCA(2/3) AD8 AD9
DATA
ADDRESS /DATA
GND ADB5 ADB4
ADB3 ADB2 VCC ADB1 ADB0 ADEN BKRDY GND UPPEN CYCLD CYCLS CLK25 VCC /RST FRP VFRP TESTO GND TEST1 SI/TEST2 SO SCK VCC /SEN TMS TCK /TRST GND TDI TDO /LISO LLREC VCC
AD10 AD11 GND AD12 AD13 AD14 AD15 VCCA(2/3) VCC /INTP CYCLEIN NTZIHZ NTOUT GND NTCLK RAMEZ LCNA LPWRDN VCC GND DVSS C/LKON LPS CNA TESTM1 TESTM2 /RESET /ISO AVCC PWRDN PLLFLT PLLVDD PLLGND PLLGND XI XO
ADDT5 ADDT4 ADDT3 ADDT2 ADDT1 ADDT0 INTP
IC3801 TSB13LV01GGJ (DIGITAL-I/F)
TO VTR MAIN CONNECTION (Page:3-43/C-16)
R3803 0
530 FRP
TO VTR MAIN CONNECTION (Page:3-43/B-16)
532 DC
531 INTP
533 RST DIF
534 BCLK
TO VTR MAIN CONNECTION (Page:3-43/C-17)
538 TMS
TO VTR MAIN CONNECTION (Page:3-43/D-17)
537 TCK
TO VTR MAIN CONNECTION (Page:3-43/C-16)
528 TDI
TO VTR MAIN CONNECTION (Page:3-43/C-17)
541 ALE
542 DT15
543 ADDT14
544 ADDT13
545 ADDT12
546 ADDT11
547 ADDT10
548 ADDT9
549 ADDT8
550 ADDT7
551 ADDT6
552 ADDT5
553 ADDT4
554 ADDT3
555 ADDT2
556 ADDT1
557 ADDT0
RA3804 10K(x2)
RA3805 10K(x2)
R3809 10K
C3813 0.1
LO3 LO2 LO1
LD0 LCTLI LCTLO LSYSCLK VCC GND DGND DVCC PC0 PC1 PC2 LREQ CTL0 CTL1 D0 D1 SYSCLK DVCC DGND AGND AGND TPBIAS AGND AGND AVCC AVCC CPS RI RO TPB- TPB+ TPA- TPA+
C3809 1000P
R3808 390K
C3827 0.01
C3814 1000P
R3815 3300
R3807 2700
C3807 1
R3811 56
R3812 56
R3845 27
R3801 10K
RA3809 10K(x2)
RA3803 10K(x2)
R3804 10K
GND TPA+ TPA- TPB+ TPB- GND
DV JACK
JK3801 VJJ0588
R3813 56
R3816 390
R3805 4700
R3814 56
C3808 270P
TO VTR MAIN CONNECTION (Page:3-43/C-16)
520 INF
521 CLK246
C3825 6V10
C3817 0.1
C3802 0.1
C3803 0.1
C3804 0.1
C3806 1000P
C3816 1000P
TO VTR MAIN CONNECTION (Page:3-43/C-17)
539 DIF TDO
540 PHY RST
G F E D C B A
1 2 3 4 5

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-22. AUDIO SCHEMATIC DIAGRAM

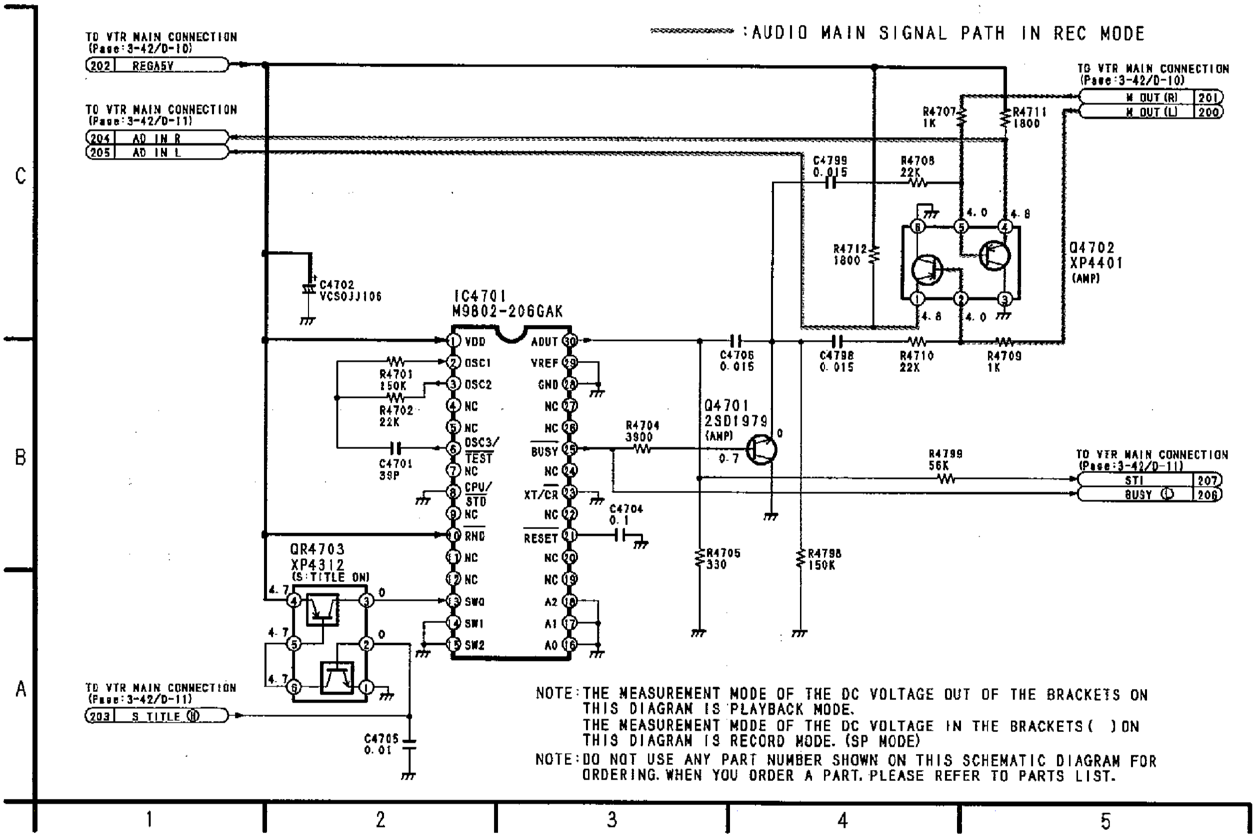


═ ═:AUDIO MAIN SIGNAL PATH IN REC MODE
═ ═:AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
TO VTR MAIN CONNECTION (Page:3-42/C-10)
213 REGA5V
212 SPK5V
TO VTR MAIN CONNECTION (Page:3-42/C-10)
211 SP OUT2
210 SP OUT1
TO VTR MAIN CONNECTION (Page:3-42/C-11)
216 BUSY Ⓛ
217 STI
TO VTR MAIN CONNECTION (Page:SCH-42/B-11)
DA OUT L 221
DA OUT R 222
TO VTR MAIN CONNECTION (Page:3-42/C-11)
A MUTE 220
SPK ON Ⓛ 219
SPK VOL 218
TO VTR MAIN CONNECTION (Page:3-42/C-10)
A RCH OUT 215
A LCH OUT 214
(NV-DS5 ONLY)
IC4201 BA7785FS (SPEAKER AMP)
HPVCC
HPOUT(L)
HPOUT(R)
HPGND
SPVCC
SPOUT(+)
SPOUT(-)
SPGND
VRCTL
IN(L)
MUTE
IN(R)
BIAS
MIX OUT
SPIN1
SPIN2
SPINCTL
SPON/OFF
HP AMP 6dB
SP AMP
INV
MIX AMP
ATT 12dB
VR
R
QR4201 UN9212 (SPK ON Ⓛ:OFF)
L4201 10μ
L4202 10μ
C4212 6V47
C4219 0.1
C4213 6V47
C4215 0.1
C4214 0.1
C4211 1200P
C4208 1200P
R4211 47K
C4218 6V10
C4207 0.1
C4201 0.033
C4202 0.033
C4203 6V10
C4204 0.01
C4205 2200P
R4205
R4203 10K
R4204 10K
R4202 6800
R4201 6800
C4206 0.01
C4209 0.47
C4210 0.47
L4001 10μ
Q4001 XN4504 (MUTE)
IC4001 NJM3414AV
R4017 100
C4015 6V10
R4013 22K
R4001 27K
C4011 0.1
C4012 6V10
C4017 4700P
R4015 27K
C4013 120P
R4011 10K
C4005 1500P
R4003 8200
C4003 6V10
C4002 6V10
C4001 0.1
R4002 27K
C4014 120P
R4012 10K
R4018 100
C4016 6V10
R4004 8200
C4004 6V10
R4014 22K
C4018 4700P
R4016 27K
C4006 1500P
RA4001 5600 (x2)
D4001 MA133
D4002 MA728
QR4003 UN9112 (SP MUTE)
QR4002 UN9112 (A MUTE:ON)
R4021 120K
C4007 6V22
R4022 680
QR4001 UN9212 (A MUTE Ⓗ:ON)
A
B
C
D
E
1
2
3
4
5
6
7
8

NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ( ) ON THIS DIAGRAM IS STOP MODE.

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

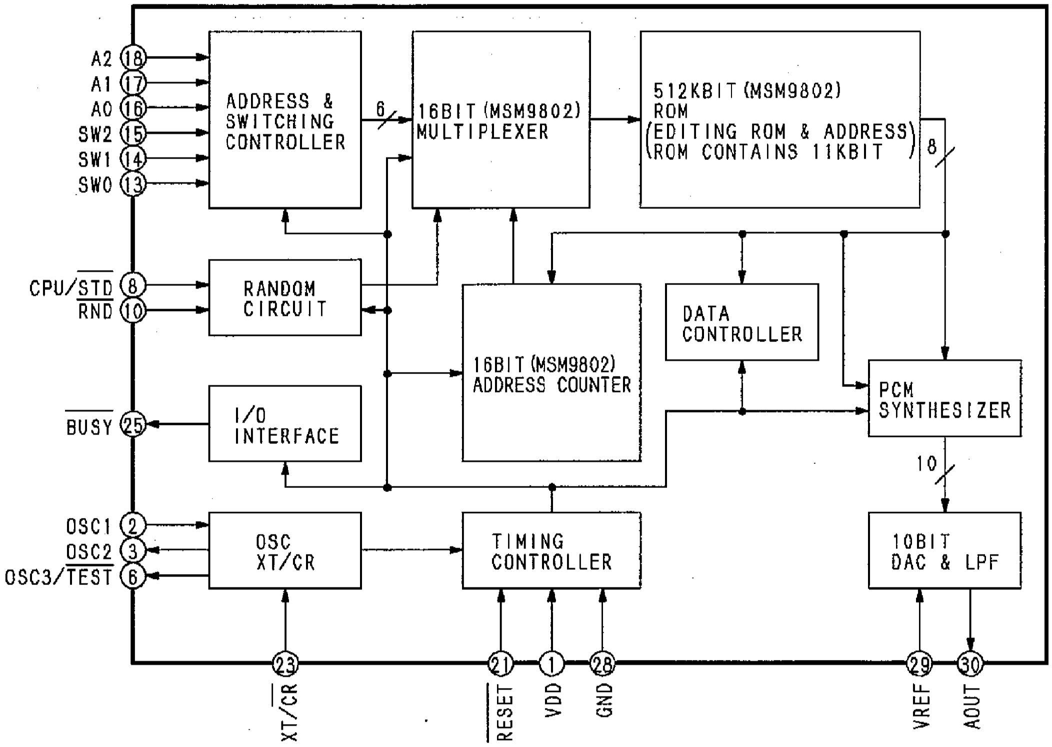
3-23. SOUND TITLE SCHEMATIC DIAGRAM


:AUDIO MAIN SIGNAL PATH IN REC MODE
TO VTR MAIN CONNECTION (Page:3-42/D-10)
202 REG A5V
TO VTR MAIN CONNECTION (Page:3-42/D-11)
204 AD IN R
205 AD IN L
TO VTR MAIN CONNECTION (Page:3-42/D-10)
M OUT (R) 201
M OUT (L) 200
R4707 1K
R4711 1800
C4799 0.015
R4708 22K
R4712 1800
Q4702 XP4401 (AMP)
C4702 VCS0JJ106
IC4701 M9802-206GAK
VDD
OSC1
OSC2
NC
OSC3/TEST
CPU/STD
RND
SW0
SW1
SW2
AOUT
VREF
GND
BUSY
XT/CR
RESET
A2
A1
A0
R4701 150K
R4702 22K
C4701 39P
C4706 0.015
C4798 0.015
R4710 22K
R4709 1K
Q4701 2SD1979 (AMP)
R4704 3900
R4799 56K
TO VTR MAIN CONNECTION (Page:3-42/D-11)
STI 207
BUSY 206
C4704 0.1
R4705 330
R4798 150K
QR4703 XP4312 (S-TITLE ON)
TO VTR MAIN CONNECTION (Page:3-42/D-11)
203 S TITLE
C4705 0.01
C
B
A
1
2
3
4
5

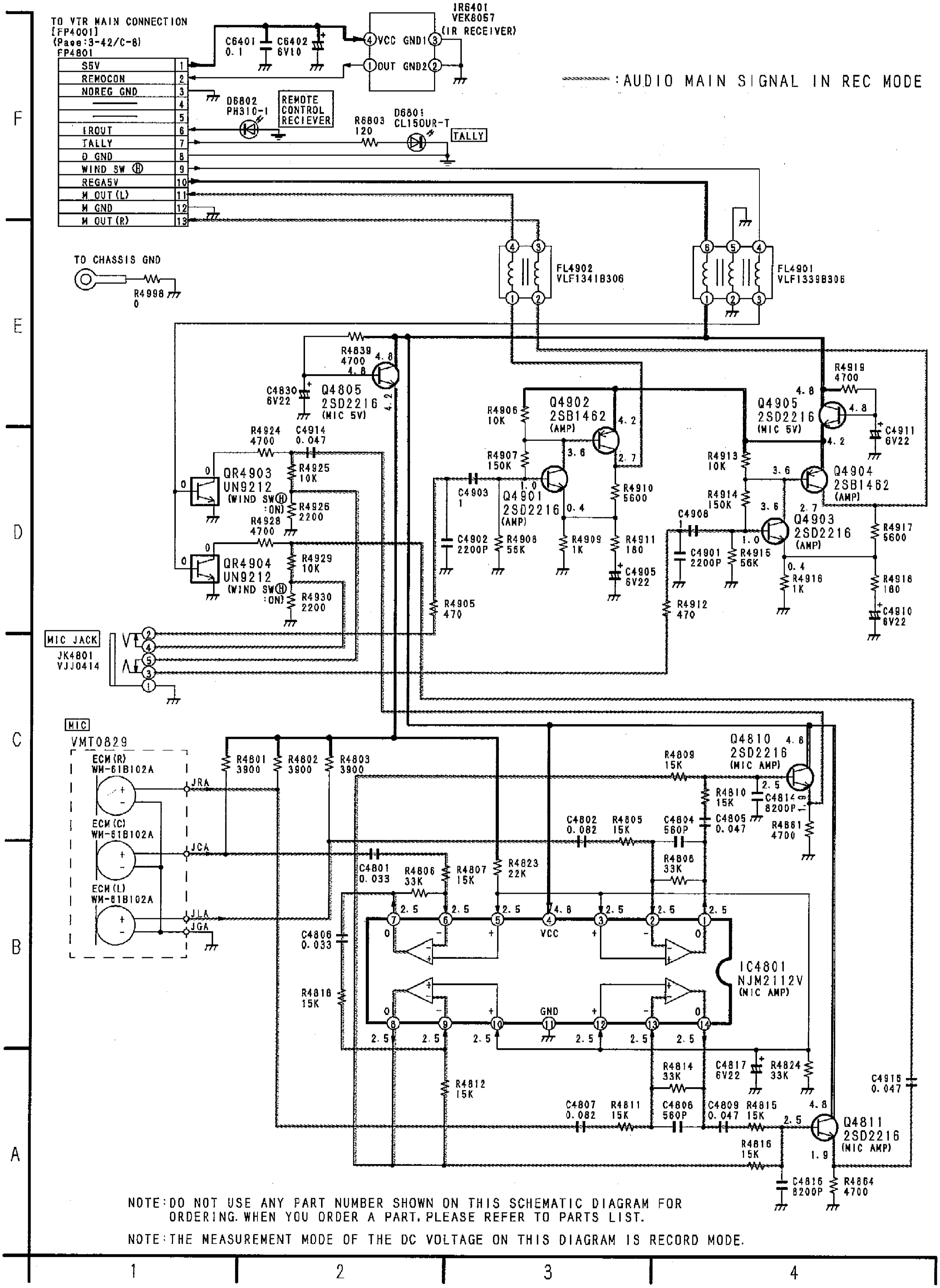
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE.
THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE. (SP MODE)

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

IC4701: M9802-206GAK


A2 ⑱
A1 ⑰
A0 ⑯
SW2 ⑮
SW1 ⑭
SW0 ⑬
ADDRESS & SWITCHING CONTROLLER
6
16BIT (MSM9802) MULTIPLEXER
512KBIT (MSM9802) ROM (EDITING ROM & ADDRESS ROM CONTAINS 11KBIT)
8
CPU/STD ⑧
RND ⑩
RANDOM CIRCUIT
16BIT (MSM9802) ADDRESS COUNTER
DATA CONTROLLER
PCM SYNTHESIZER
BUSY ㉕
I/O INTERFACE
10
OSC1 ②
OSC2 ③
OSC3/TEST ⑥
OSC XT/CR
TIMING CONTROLLER
10BIT DAC & LPF
㉓ XT/CR
㉑ RESET
① VDD
㉘ GND
㉙ VREF
㉚ AOUT

3-24. FRONT SCHEMATIC DIAGRAM

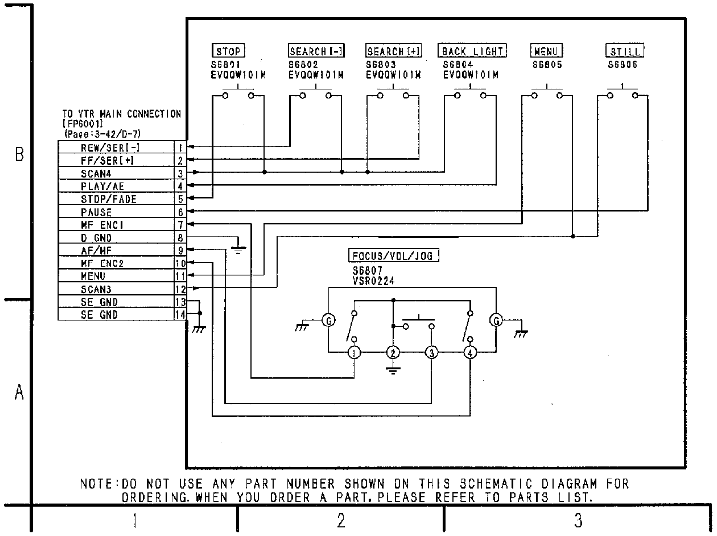


TO VTR MAIN CONNECTION
[FP4001]
(Page:3-42/C-8)
FP4801
1 S5V
2 REMOCON
3 NOREG GND
4
5
6 IROUT
7 TALLY
8 D GND
9 WIND SW Ⓗ
10 REGA5V
11 M OUT (L)
12 M GND
13 M OUT (R)
C6401 0.1
C6402 6V10
IR6401 VEK8057 (IR RECEIVER)
VCC GND1
OUT GND2
:AUDIO MAIN SIGNAL IN REC MODE
D6802 PH310-1
REMOTE CONTROL RECIEVER
R6803 120
D6801 CL150UR-T
TALLY
TO CHASSIS GND
R4998 0
FL4902 VLF1341B306
FL4901 VLF1339B306
R4839 4700
C4830 6V22
Q4805 2SD2216 (MIC 5V)
R4924 4700
C4914 0.047
QR4903 UN9212 (WIND SW Ⓗ :ON)
R4925 10K
R4926 2200
R4928 4700
QR4904 UN9212 (WIND SW Ⓗ :ON)
R4929 10K
R4930 2200
Q4902 2SB1462 (AMP)
R4906 10K
R4907 150K
C4903 1
Q4901 2SD2216 (AMP)
C4902 2200P
R4908 56K
R4909 1K
R4910 5600
R4911 180
C4905 6V22
R4905 470
Q4905 2SD2216 (MIC 5V)
R4919 4700
C4911 6V22
R4913 10K
Q4904 2SB1462 (AMP)
R4914 150K
C4908 1
Q4903 2SD2216 (AMP)
C4901 2200P
R4915 56K
R4916 1K
R4917 5600
R4918 180
C4910 6V22
R4912 470
MIC JACK
JK4801 VJJ0414
MIC
VMT0829
ECM(R) WM-61B102A
ECM(C) WM-61B102A
ECM(L) WM-61B102A
JRA
JCA
JLA
JGA
R4801 3900
R4802 3900
R4803 3900
C4801 0.033
R4806 33K
R4807 15K
R4823 22K
C4802 0.082
R4805 15K
C4804 560P
C4805 0.047
R4809 15K
R4810 15K
C4814 8200P
Q4810 2SD2216 (MIC AMP)
R4861 4700
R4808 33K
C4806 0.033
R4818 15K
IC4801 NJM2112V (MIC AMP)
VCC
GND
R4812 15K
R4814 33K
C4817 6V22
R4824 33K
C4807 0.082
R4811 15K
C4808 560P
C4809 0.047
R4815 15K
R4816 15K
C4815 8200P
R4864 4700
C4916 0.047
Q4811 2SD2216 (MIC AMP)
F
E
D
C
B
A
1
2
3
4

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

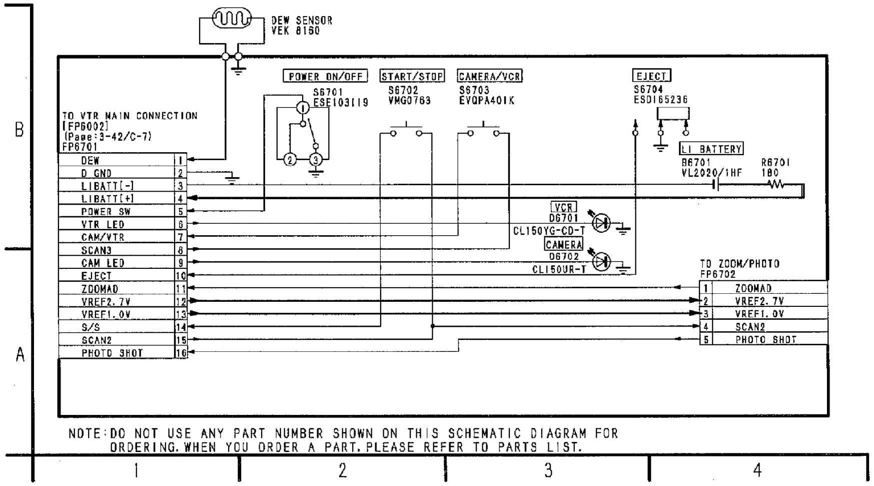
NOTE:THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS RECORD MODE.

3-25. TOP OPERATION SCHEMATIC DIAGRAM


STOP
S6801
EVQQW101M
SEARCH[-]
S6802
EVQQW101M
SEARCH[+]
S6803
EVQQW101M
BACK LIGHT
S6804
EVQQW101M
MENU
S6805
STILL
S6806
TO VTR MAIN CONNECTION
[FP6001]
(Page:3-42/D-7)
REW/SER[-]
FF/SER[+]
SCAN4
PLAY/AE
STOP/FADE
PAUSE
MF ENC1
D GND
AF/MF
MF ENC2
MENU
SCAN3
SE GND
SE GND
FOCUS/VOL/JOG
S6807
VSR0224
B
A
1
2
3

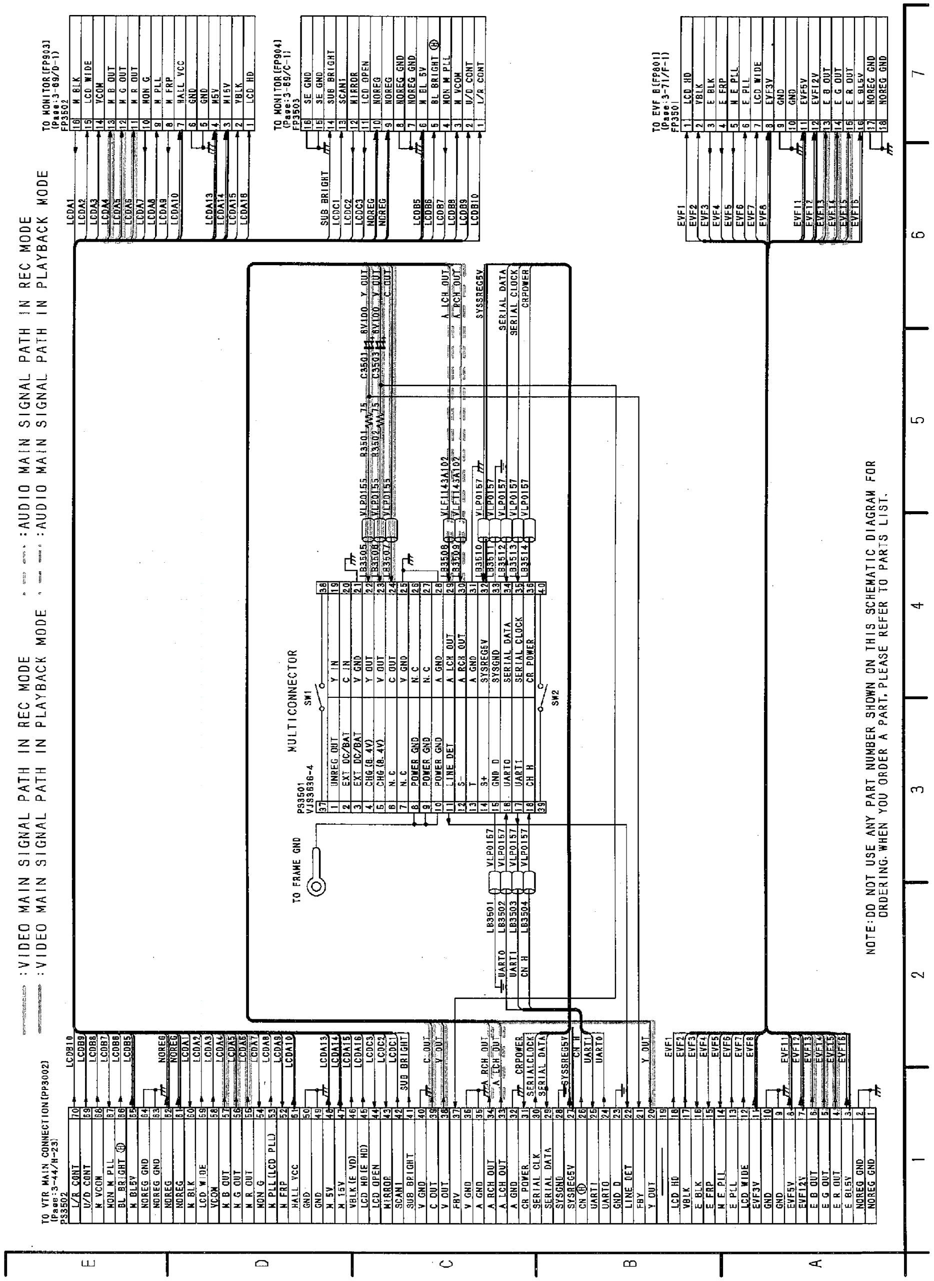
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-26. REAR OPERATION SCHEMATIC DIAGRAM


DEW SENSOR
VEK 8160
TO VTR MAIN CONNECTION
[FP6002]
(Page:3-42/C-7)
FP6701
DEW
D GND
LIBATT[-]
LIBATT[+]
POWER SW
VTR LED
CAM/VTR
SCAN3
CAM LED
EJECT
ZOOMAD
VREF2.7V
VREF1.0V
S/S
SCAN2
PHOTO SHOT
POWER ON/OFF
S6701
ESE103119
START/STOP
S6702
VMG0763
CAMERA/VCR
S6703
EVQPA401K
EJECT
S6704
ESD165236
LI BATTERY
B6701
VL2020/1HF
R6701
180
VCR
D6701
CL150YG-CD-T
CAMERA
D6702
CL150UR-T
TO ZOOM/PHOTO
FP6702
ZOOMAD
VREF2.7V
VREF1.0V
SCAN2
PHOTO SHOT
B
A
1
2
3
4

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

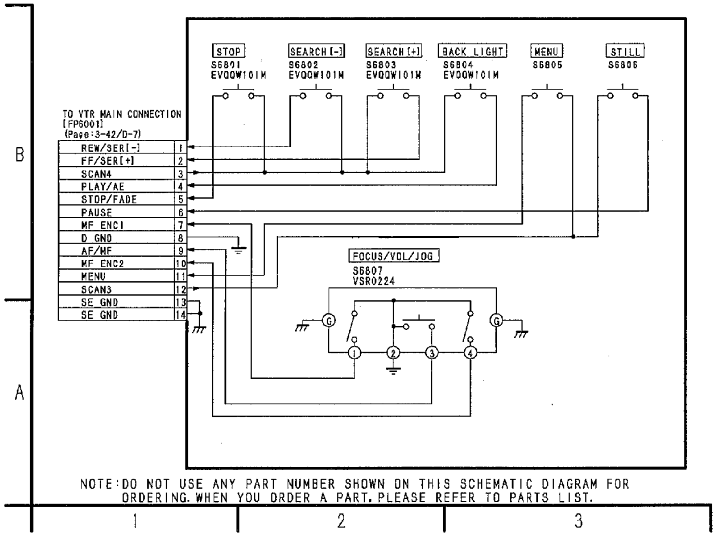
3-27. LCD I/F SCHEMATIC DIAGRAM


TO MONITOR[FP903]
(Page:3-69/D-1)
FP3502
TO MONITOR[FP904]
(Page:3-69/C-1)
FP3503
TO EVF B[FP801]
(Page:3-71/F-1)
FP3501
TO VTR MAIN CONNECTION[FP3002]
(Page:3-44/H-23)
FP3504
MULTICONNECTOR
PS3501
VJS3630-4
SW1
SW2
TO FRAME GND
E
D
C
B
A
1
2
3
4
5
6
7

:VIDEO MAIN SIGNAL PATH IN REC MODE :AUDIO MAIN SIGNAL PATH IN REC MODE
:VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE :AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

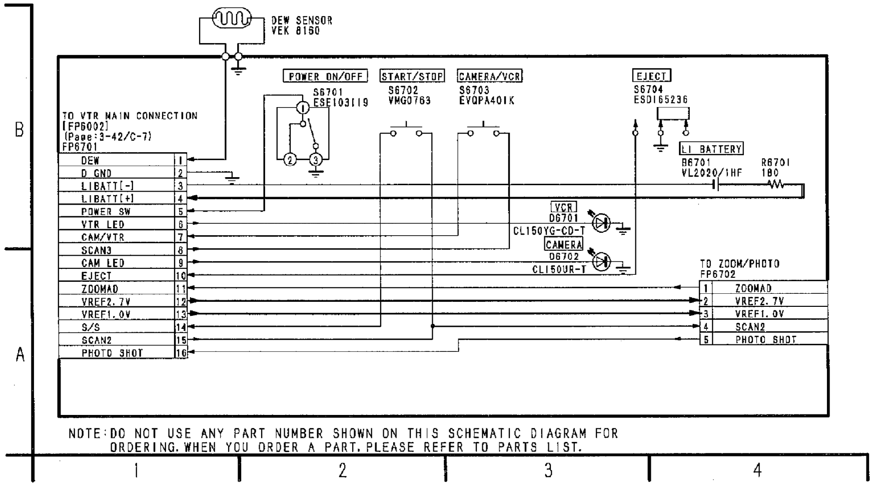
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-25. TOP OPERATION SCHEMATIC DIAGRAM


STOP
S6801
EVQQW101M
SEARCH[-]
S6802
EVQQW101M
SEARCH[+]
S6803
EVQQW101M
BACK LIGHT
S6804
EVQQW101M
MENU
S6805
STILL
S6806
TO VTR MAIN CONNECTION
[FP6001]
(Page:3-42/D-7)
REW/SER[-]
FF/SER[+]
SCAN4
PLAY/AE
STOP/FADE
PAUSE
MF ENC1
D GND
AF/MF
MF ENC2
MENU
SCAN3
SE GND
SE GND
FOCUS/VOL/JOG
S6807
VSR0224
B
A
1
2
3

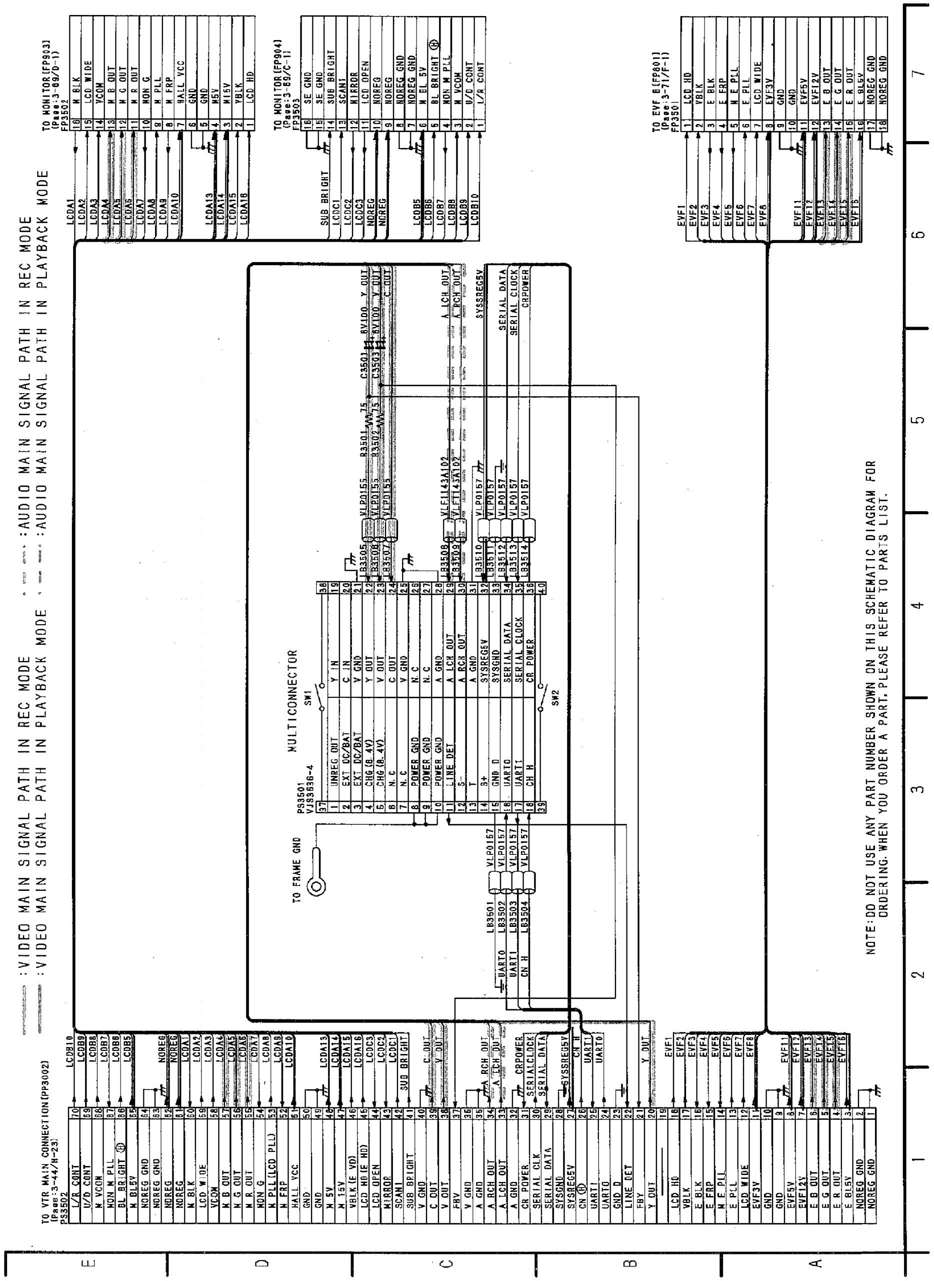
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-26. REAR OPERATION SCHEMATIC DIAGRAM


DEW SENSOR
VEK 8160
TO VTR MAIN CONNECTION
[FP6002]
(Page:3-42/C-7)
FP6701
DEW
D GND
LIBATT[-]
LIBATT[+]
POWER SW
VTR LED
CAM/VTR
SCAN3
CAM LED
EJECT
ZOOMAD
VREF2.7V
VREF1.0V
S/S
SCAN2
PHOTO SHOT
POWER ON/OFF
S6701
ESE103119
START/STOP
S6702
VMG0763
CAMERA/VCR
S6703
EVQPA401K
EJECT
S6704
ESD165236
LI BATTERY
B6701
VL2020/1HF
R6701
180
VCR
D6701
CL150YG-CD-T
CAMERA
D6702
CL150UR-T
TO ZOOM/PHOTO
FP6702
ZOOMAD
VREF2.7V
VREF1.0V
SCAN2
PHOTO SHOT
B
A
1
2
3
4

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

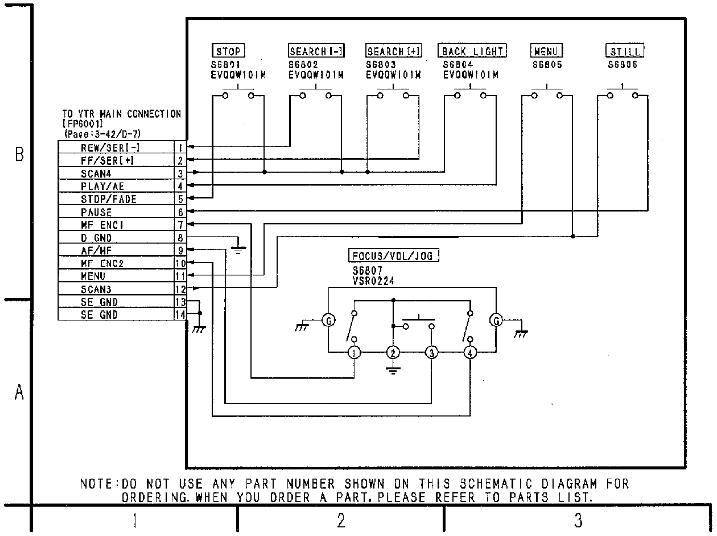
3-27. LCD I/F SCHEMATIC DIAGRAM


TO MONITOR [FP3003]
(Page:3-69/D-1)
FP3502
TO MONITOR [FP3004]
(Page:3-69/C-1)
FP3503
TO EVF B [FP3801]
(Page:3-71/F-1)
FP3504
TO VTR MAIN CONNECTION [PP3002]
(Page:3-44/H-23)
PS3502
MULTICONNECTOR
PS3501
VJ3930-4
SW1
SW2
TO FRAME GND
E
D
C
B
A
1
2
3
4
5
6
7

:VIDEO MAIN SIGNAL PATH IN REC MODE
:VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
:AUDIO MAIN SIGNAL PATH IN REC MODE
:AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE

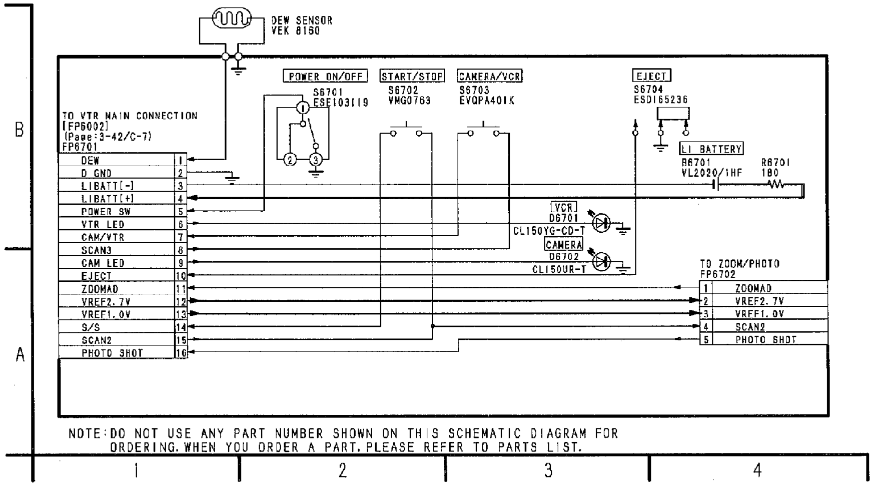
NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-25. TOP OPERATION SCHEMATIC DIAGRAM


STOP
S6801
EVQQW101M
SEARCH[-]
S6802
EVQQW101M
SEARCH[+]
S6803
EVQQW101M
BACK LIGHT
S6804
EVQQW101M
MENU
S6805
STILL
S6806
TO VTR MAIN CONNECTION
[FP6001]
(Page:3-42/D-7)
REW/SER[-]
FF/SER[+]
SCAN4
PLAY/AE
STOP/FADE
PAUSE
MF ENC1
D GND
AF/MF
MF ENC2
MENU
SCAN3
SE GND
SE GND
FOCUS/VOL/JOG
S6807
VSR0224
B
A
1
2
3

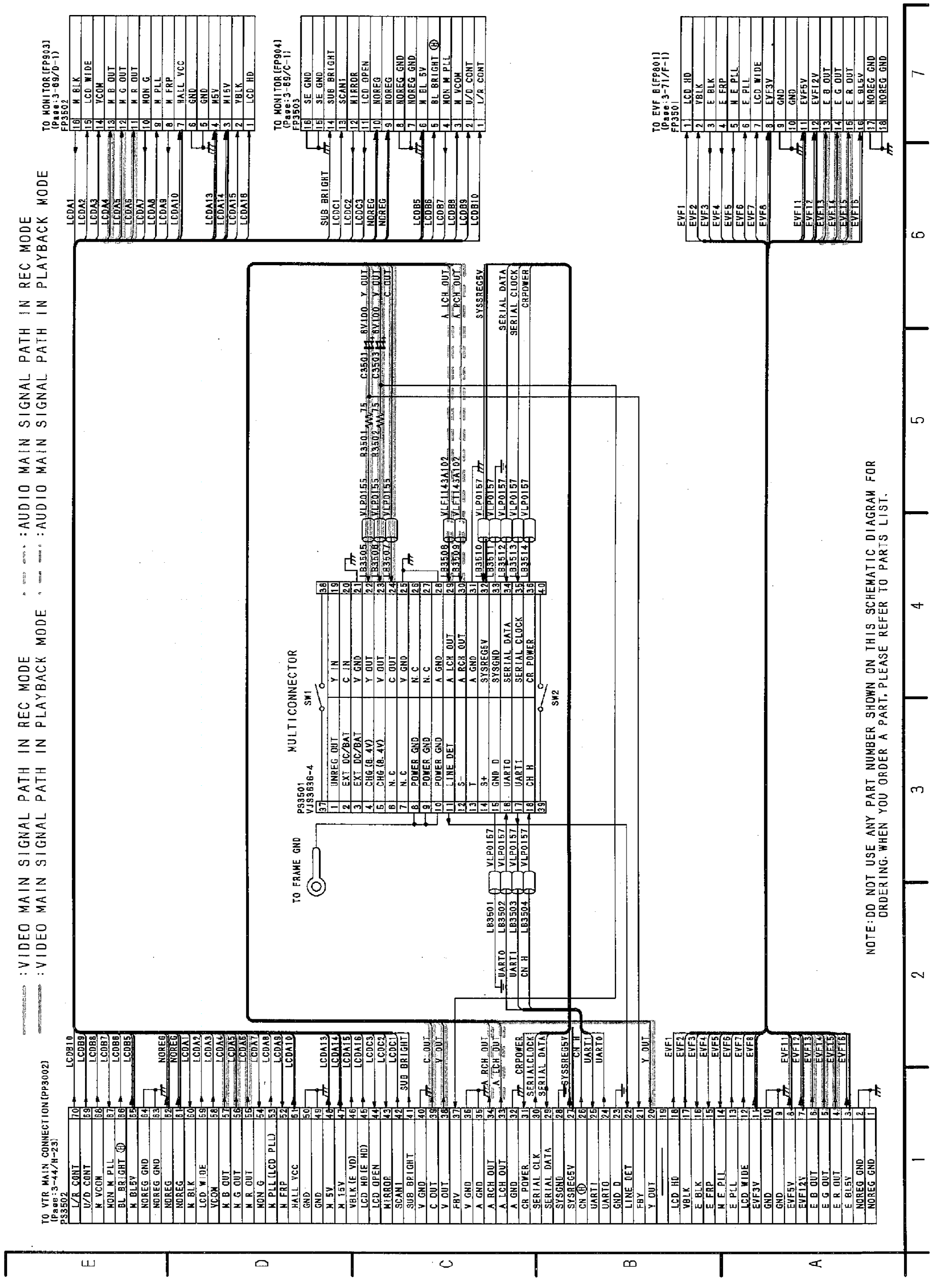
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-26. REAR OPERATION SCHEMATIC DIAGRAM


DEW SENSOR
VEK 8160
TO VTR MAIN CONNECTION
[FP6002]
(Page:3-42/C-7)
FP6701
DEW
D GND
LIBATT[-]
LIBATT[+]
POWER SW
VTR LED
CAM/VTR
SCAN3
CAM LED
EJECT
ZOOMAD
VREF2.7V
VREF1.0V
S/S
SCAN2
PHOTO SHOT
POWER ON/OFF
S6701
ESE103119
START/STOP
S6702
VMG0763
CAMERA/VCR
S6703
EVQPA401K
EJECT
S6704
ESD165236
LI BATTERY
B6701
VL2020/1HF
R6701
180
VCR
D6701
CL150YG-CD-T
CAMERA
D6702
CL150UR-T
TO ZOOM/PHOTO
FP6702
ZOOMAD
VREF2.7V
VREF1.0V
SCAN2
PHOTO SHOT
B
A
1
2
3
4

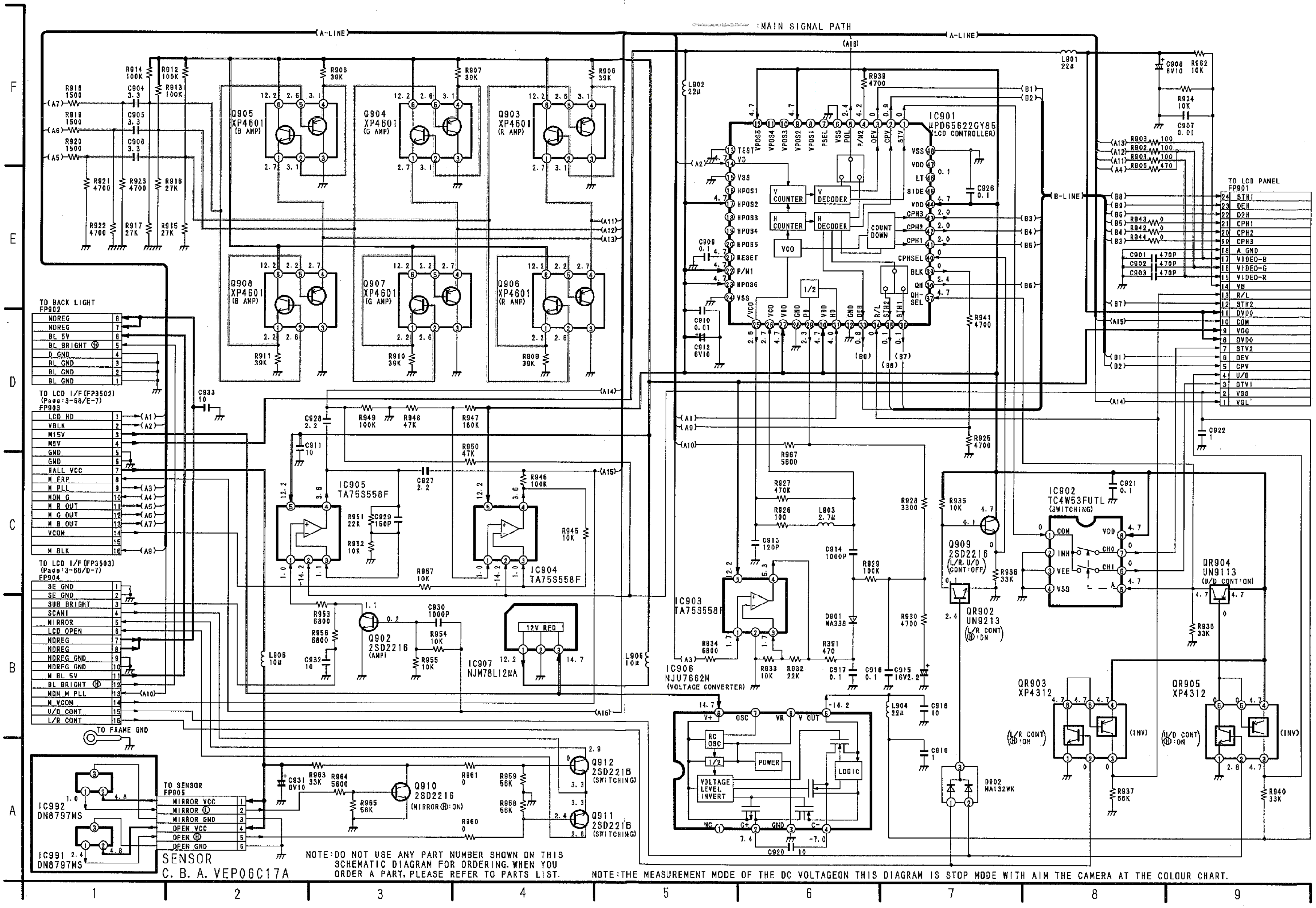
NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-27. LCD I/F SCHEMATIC DIAGRAM


:VIDEO MAIN SIGNAL PATH IN REC MODE
:VIDEO MAIN SIGNAL PATH IN PLAYBACK MODE
:AUDIO MAIN SIGNAL PATH IN REC MODE
:AUDIO MAIN SIGNAL PATH IN PLAYBACK MODE
TO MONITOR[FP903]
(Page:3-69/D-1)
FP3502
TO MONITOR[FP904]
(Page:3-69/C-1)
FP3503
TO EVF B[FP801]
(Page:3-71/F-1)
FP3501
TO VTR MAIN CONNECTION[FP3002]
(Page:3-44/H-23)
FP3504
MULTICONNECTOR
PS3501
VJS3930-4
SW1
SW2
TO FRAME GND
R3501 75
R3502 75
C3501 6V100
C3502 6V100
Y OUT
C OUT
A LCH OUT
A RCH OUT
SYSSREG5V
SERIAL DATA
SERIAL CLOCK
CRPOWER
UART1
UART0
CN H
E
D
C
B
A
1
2
3
4
5
6
7

NOTE:DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

3-28. MONITOR & SENSOR FLEX. CARD SCHEMATIC DIAGRAM FOR NV-DS5

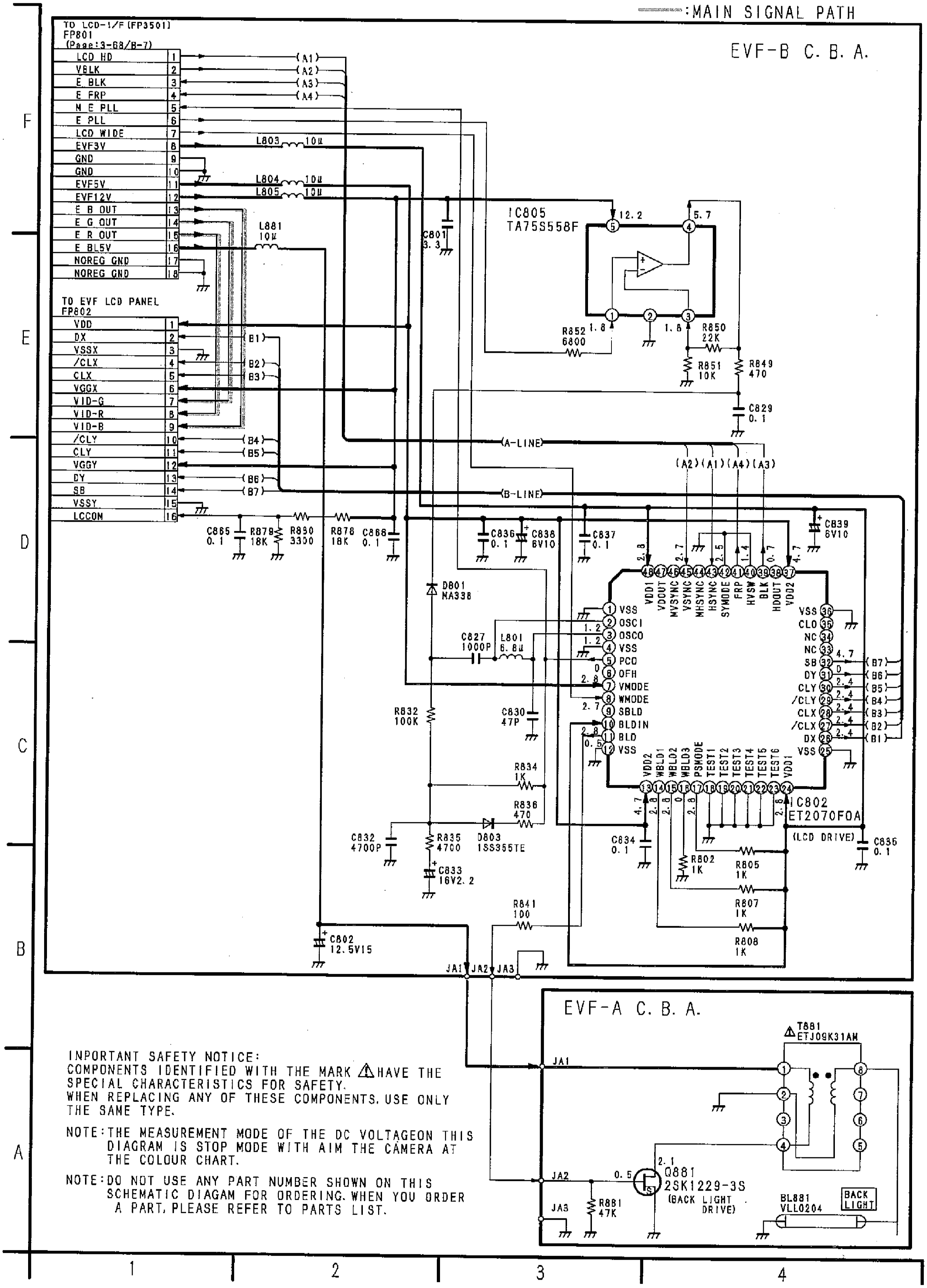

:MAIN SIGNAL PATH
A-LINE
B-LINE
Q905 XP4601 (B AMP)
Q904 XP4601 (G AMP)
Q903 XP4601 (R AMP)
Q908 XP4601 (B AMP)
Q907 XP4601 (G AMP)
Q906 XP4601 (R AMP)
IC901 µPD65622GY85 (LCD CONTROLLER)
Y COUNTER
Y DECODER
H COUNTER
H DECODER
COUNT DOWN
VCO
1/2
TO LCD PANEL FP901
STH1
OEH
O2H
CPH1
CPH2
CPH3
A GND
VIDEO-B
VIDEO-G
VIDEO-R
VB
R/L
STH2
DVDD
COM
VGG
DVDD
STV2
OEV
CPV
U/D
STV1
VSS
VGL
TO BACK LIGHT FP902
NDREG
NDREG
BL 5V
BL BRIGHT ⓗ
D GND
BL GND
BL GND
BL GND
TO LCD I/F(FP3502) (Page:3-68/E-7) FP903
LCD HD
VBLK
M15V
M5V
GND
GND
HALL VCC
M FRP
M PLL
MON G
M R OUT
M G OUT
M B OUT
VCOM
M BLK
TO LCD I/F(FP3503) (Page:3-68/D-7) FP904
SE GND
SE GND
SUB BRIGHT
SCAN1
MIRROR
LCD OPEN
NDREG
NDREG
NDREG GND
NDREG GND
M BL 5V
BL BRIGHT ⓗ
MON M PLL
M VCOM
U/D CONT
L/R CONT
TO FRAME GND
IC905 TA75S558F
IC904 TA75S558F
Q902 2SD2216 (AMP)
IC907 NJM78L12UA
12V REG
IC903 TA75S558F
IC906 NJU7662M (VOLTAGE CONVERTER)
RC OSC
1/2
POWER
VOLTAGE LEVEL INVERT
LOGIC
Q909 2SD2216 (L/R, U/D) (CONT:OFF)
IC902 TC4W53FUTL (SWITCHING)
QR904 UN9113 (U/D CONT:ON)
QR902 UN9213 (L/R CONT) (ⓗ:ON)
QR903 XP4312
QR905 XP4312
(INV)
(L/R CONT) (ⓗ:ON)
(U/D CONT) (ⓗ:ON)
D802 MA132WK
D801 MA3330
IC992 DN8797MS
IC991 DN8797MS
TO SENSOR FP905
MIRROR VCC
MIRROR Ⓛ
MIRROR GND
OPEN VCC
OPEN ⓗ
OPEN GND
SENSOR C. B. A. VEP06C17A
Q910 2SD2216 (MIRROR ⓗ:ON)
Q912 2SD2216 (SWITCHING)
Q911 2SD2216 (SWITCHING)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGRAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGEON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE COLOUR CHART.

Back Page: TOP OPERATION / REAR OPERATION / LCD I/F Section

3-29. EVF (A) & (B) SCHEMATIC DIAGRAM



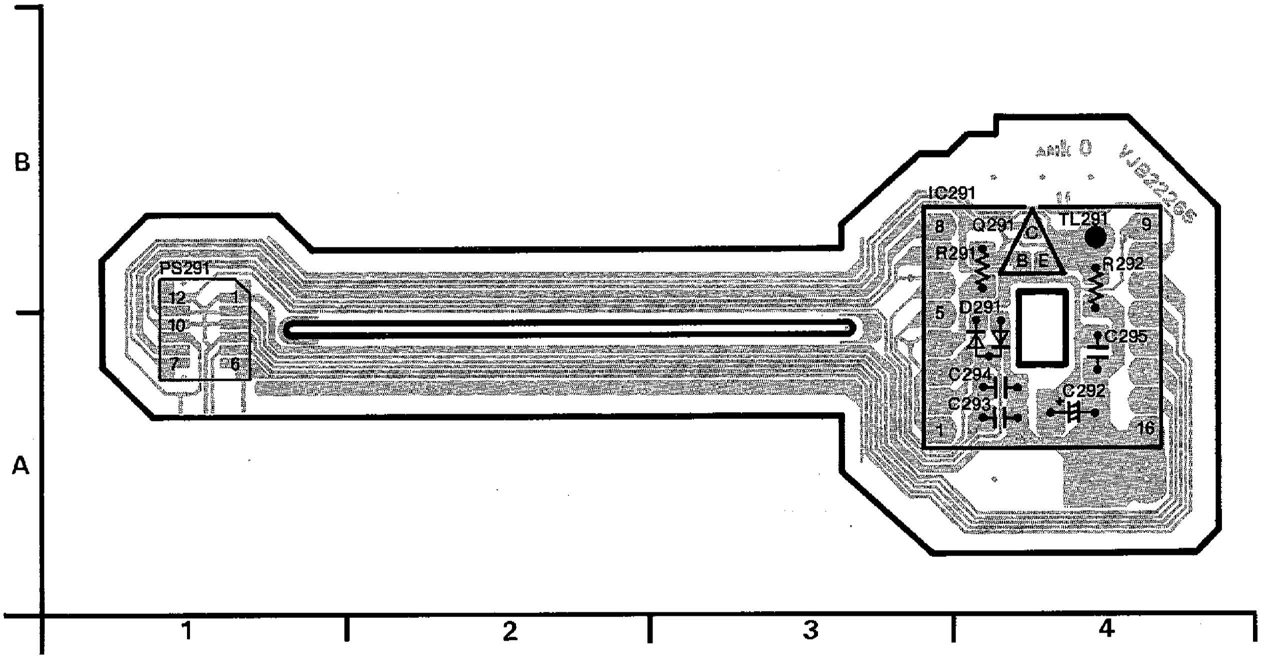
═══:MAIN SIGNAL PATH
EVF-B C. B. A.
TO LCD-I/F (FP3501)
FP801
(Page:3-68/B-7)
1 LCD HD
2 VBLK
3 E BLK
4 E FRP
5 M E PLL
6 E PLL
7 LCD WIDE
8 EVF3V
9 GND
10 GND
11 EVF5V
12 EVF12V
13 E B OUT
14 E G OUT
15 E R OUT
16 E BL5V
17 NOREG GND
18 NOREG GND
TO EVF LCD PANEL
FP802
1 VDD
2 DX
3 VSSX
4 /CLX
5 CLX
6 VGGX
7 VID-G
8 VID-R
9 VID-B
10 /CLY
11 CLY
12 VGGY
13 DY
14 SB
15 VSSY
16 LCCOM
L803 10µ
L804 10µ
L805 10µ
L881 10µ
C801 3.3
IC805
TA75S558F
R852 6800
R850 22K
R851 10K
R849 470
C829 0.1
A-LINE
B-LINE
C865 0.1
R879 18K
R880 3300
R878 18K
C866 0.1
C836 0.1
C838 6V10
C837 0.1
C839 6V10
D801 MA338
C827 1000P
L801 6.8µ
R832 100K
C830 47P
R834 1K
R836 470
C832 4700P
R835 4700
D803 1SS355TE
C833 16V2.2
R841 100
C802 12.5V15
C834 0.1
R802 1K
R805 1K
R807 1K
R808 1K
C835 0.1
IC802
ET2070F0A
(LCD DRIVE)
VSS OSCI OSCO VSS PCO OFH VMODE WMODE SBLD BLDIN BLD VSS
VDD1 VDDOUT MVSYNC VSYNC MHSYNC HSYNC SYMODE FRP HVSW BLK HDOUT VDD2
VSS CLO NC NC SB DY CLY /CLY CLX /CLX DX VSS
VDD2 WBLD1 WBLD2 WBLD3 PSMODE TEST1 TEST2 TEST3 TEST4 TEST5 TEST6 VDD1
JA1 JA2 JA3
EVF-A C. B. A.
T881
ETJ09K31AM
Q881
2SK1229-3S
(BACK LIGHT DRIVE)
R881 47K
BL881 VLL0204
BACK LIGHT
F E D C B A
1 2 3 4

INPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

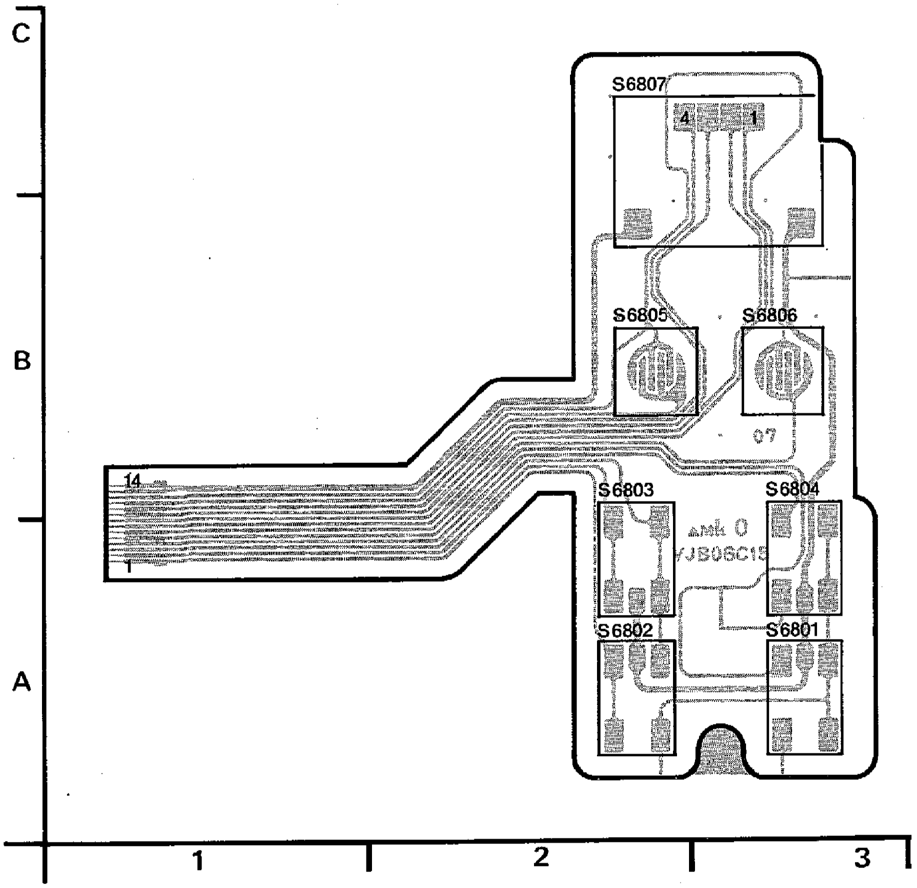
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGEON THIS DIAGRAM IS STOP MODE WITH AIM THE CAMERA AT THE COLOUR CHART.

NOTE: DO NOT USE ANY PART NUMBER SHOWN ON THIS SCHEMATIC DIAGAM FOR ORDERING. WHEN YOU ORDER A PART, PLEASE REFER TO PARTS LIST.

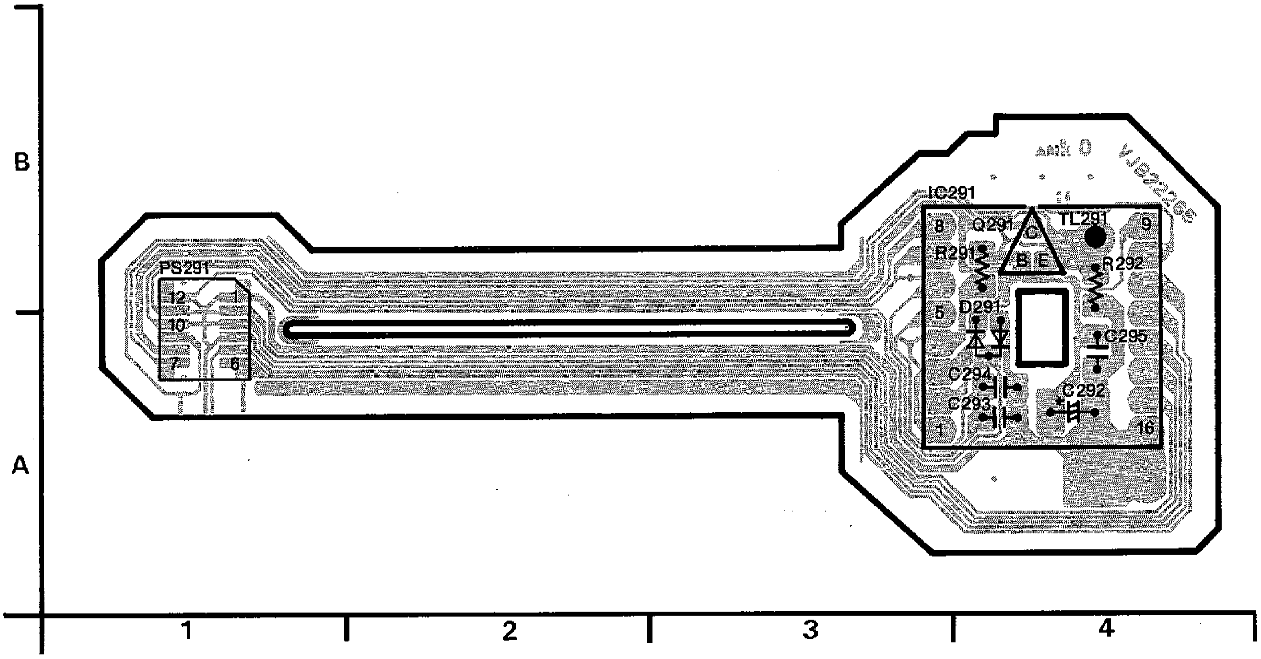
3-30. CCD FLEX. CARD C.B.A. (VEP22265A)


B
A
PS291
12
1
10
7
6
IC291
8
Q291
C
B
E
TL291
9
R291
R292
5
D291
C295
C294
C293
C292
1
16
VJB2265
1
2
3
4

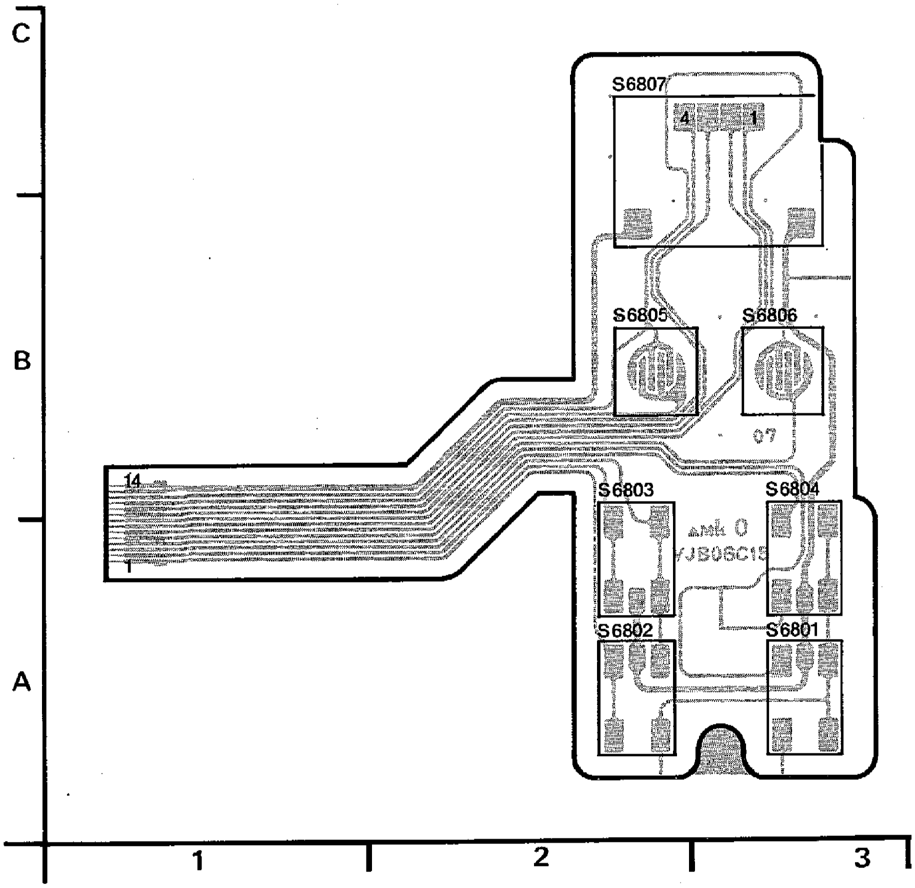
3-31. TOP OPERATION C.B.A. (VYK7917)


C
B
A
S6807
4
1
S6805
S6806
07
14
1
S6803
S6804
VJB06C15
S6802
S6801
1
2
3

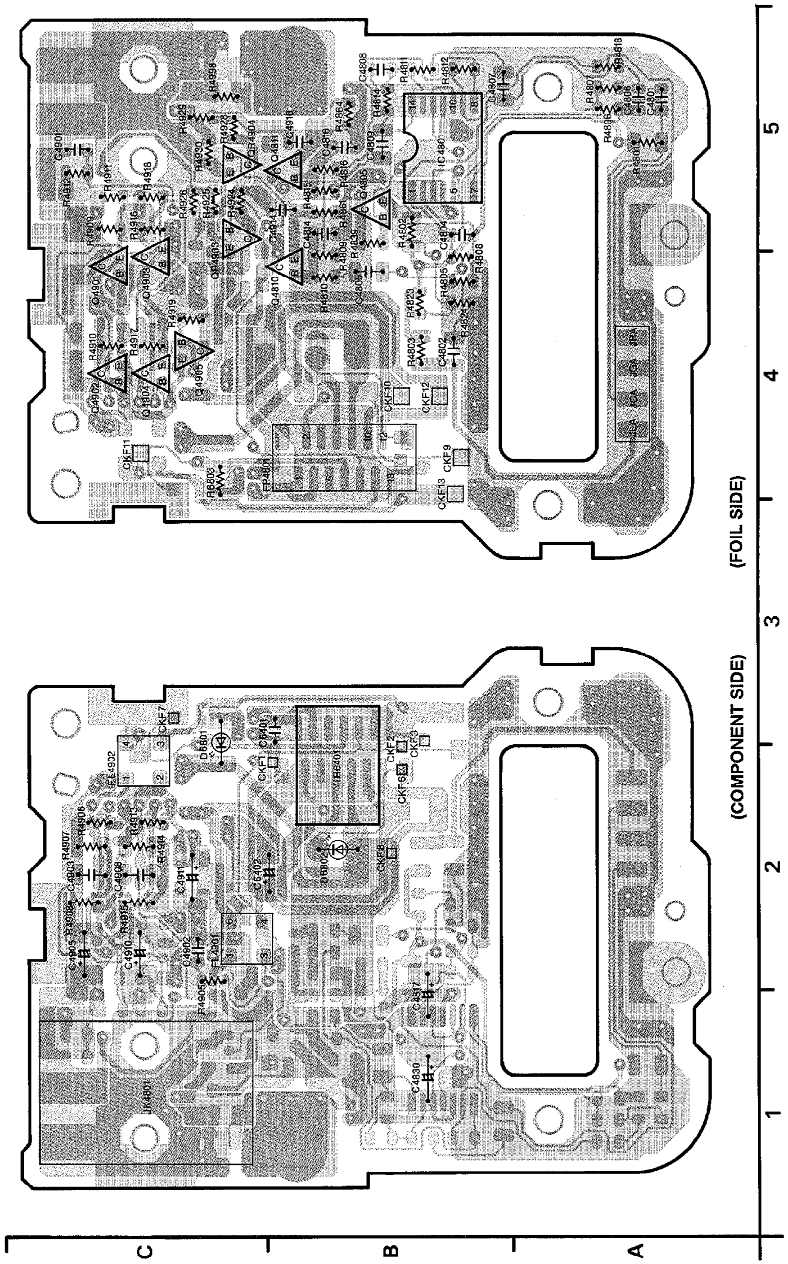
3-30. CCD FLEX. CARD C.B.A. (VEP22265A)


B
A
1
2
3
4
PS291
12
1
10
7
6
IC291
8
Q291
C
B
E
TL291
9
R291
R292
5
D291
C295
C294
C293
C292
1
16

3-31. TOP OPERATION C.B.A. (VYK7917)


C
B
A
1
2
3
S6807
4
1
S6805
S6806
07
S6803
S6804
VJB06C15
S6802
S6801
14
1

3-32. FRONT C.B.A. (VEP04674B)

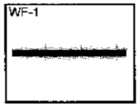


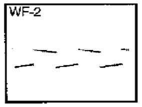
CAMERA C.B.A.

Integrated Circuit	
IC101	B-7
IC201	D-3
IC202	B-12
IC203	B-11
IC204	A-5
IC205	C-2
IC207	A-5
IC210	C-3
IC301	A-2
IC302	C-6
IC303	C-4
IC304	A-1
IC305	C-5
IC306	D-5
IC308	D-6
IC309	D-7
IC313	D-5
IC314	D-5
IC317	C-6
IC319	C-6
IC457	D-1
IC702	D-2
IC703	C-1
IC704	A-6
IC705	C-2
IC706	A-6
IC707	C-2
Test Point	
CL201	A-5
CL202	B-5
CL302	B-1
CL318	A-3
CL701	A-7
CL702	A-6
CL703	A-6
Transistor	
Q101	A-7
Q201	C-4
Q202	B-4
Q203	A-4
Q302	D-5
Q303	C-4
Q304	D-5
Q451	D-1
Q701	A-7
Q702	A-7
Q703	C-2
Q704	A-6
Q706	D-1
Q707	A-7
Transistor & Resistor	
QR101	B-7
QR302	D-6
QR303	A-2
QR304	A-2
QR305	D-6
QR306	D-6
QR310	C-5
QR701	A-5
Diode	
D204	B-5
D205	D-3
D301	D-7
D302	D-5
D303	D-7
D304	D-7
D305	D-7
Connector	
FP701	C-3
PP201	D-4
PP301	B-2
PP302	B-6
Crystal Oscillator	
X201	D-2
X301	C-6
X302	A-1
Filter	
FL201	D 4
FL202	D-4
Coil	
L101	D-1
L201	A-5
L202	C-4
L204	A-5
L205	C-3
L208	C-3
L210	B-6
L211	D-4
L214	A-4
L301	D-5
L302	A-2
L303	C-4
L304	C-4
L305	C-4
L306	C-4
L307	C-5
L308	B-1
L309	A-1
L310	B-3
L311	A-3
L312	A-3
L313	D-5
L314	C-5
L315	C-5
L318	B-3
L319	A-3
L701	A-7
L702	A-6
L703	A-7
L704	A-6
L705	C-2
LB201	C-3
LB202	A-5
LB301	B-1
LB302	A-1
LB303	A-2
LB304	A-3
LB305	A-3
LB306	A-3
Capacitor	
C101	D-1
C102	B-7
C201	D-3
C202	B-4
C204	B-5
C205	B-3
C206	A-5
C207	A-5
C208	C-2
C209	C-3
C210	D-4
C211	B-5
C212	D-4
C213	A-4
C214	A-4
C216	A-4
C217	D-4
C218	D-4
C219	B-4
C220	B-3
C221	D-4
C222	A-4
C223	C-3
C225	C-3
C226	C-3
C227	D-3
C229	C-3
C230	C-3
C231	D-4
C232	C-3
C233	A-4
C235	A-5
C236	D-4
C237	D-4
C239	D-3
C250	D-3
C301	D-7
C302	D 6
C303	C-5
C304	C-5
C305	D-5
C307	D-5
C308	D-5
C309	C-5
C310	D-6
C311	C-5
C312	C-7
C313	A-1
C314	A-1
C315	C-4
C316	C-4
C317	C-4
C318	C-4
C319	C-4
C320	C-4
C321	C-4
C322	B-1
C323	B-1
C324	A-1
C325	A-1
C326	B-3
C327	B-3
C328	B-3
C329	A-3
C330	A-3
C331	A-3
C332	A-3
C333	C-3
C334	C-3
C335	C-4
C336	A-1
C337	A-1
C338	A-3
C339	A-3
C452	D-1
C453	D-1
C454	D-1
C455	D-1
C701	C-1
C702	A-7
C703	B-7
C704	C-1
C705	C-2
C706	A-6
C707	D-1
C708	D-2
C709	A-6
C711	A-6
C712	B-6
C713	C-2
C714	B-5
C715	D-2
C716	A-6
C717	A-6
C718	C-1
C719	A-6
C720	A-6
C721	A-6
C722	A-5
C724	D-2
C725	A-6
Resistor	
R101	B-7
R102	B-7
R103	B-7
R201	A-4
R202	D-3
R203	B-4
R204	C-2
R206	B-4
R207	B-5
R208	D-4
R209	B-4
R210	C-2
R211	A-4
R213	D-3
R214	A-4
R216	A-5
R217	A 3
R218	A-5
R221	A-3
R222	D-4
R223	A-4
R224	D-4
R225	A-5
R226	B-4
R228	A-5
R229	A-4
R230	C-4
R231	B-4
R232	C-4
R233	C-4
R237	A-3
R238	A-3
R239	A-3
R241	A-6
R243	A-4
R244	C-4
R248	A-4
R249	A-5
R250	A-5
R301	B-3
R302	C-5
R304	C-7
R305	C-6
R306	C-6
R307	D-5
R308	D-5
R309	C-5
R310	D-5
R311	C-4
R312	B-3
R313	D-7
R314	C-7
R315	D-7
R316	D-5
R317	C-4
R318	C-4
R319	D-4
R320	C-7
R321	C-5
R322	C-5
R323	D-6
R324	D-5
R325	C-7
R326	C-7
R327	C-5
R328	C-5
R329	C-5
R330	C-5
R331	C-7
R332	D-6
R333	D-6
R334	A-2
R335	D-7
R336	D-6
R337	D-6
R338	C-7
R339	D-6
R340	A-3
R341	C-5
R342	C-7
R343	C-5
R344	C-5
R345	C-6
R346	C-5
R348	D-6
R351	B-2
R352	C-7
R353	C-7
R354	D-6
R355	D-6
R356	D-6
R357	D-6
R358	D-5
R359	C-4
R366	C-5
R372	A-2
R375	B-3
R376	B-3
R377	B 6
R378	D-5
R379	D-5
R380	D-5
R381	C-5
R382	C-5
R383	A-2
R385	A-1
R386	A-1
R387	C-7
R393	D-6
R451	D-1
R452	D-1
R453	D-1
R454	D-1
R701	C-1
R702	A-7
R703	A-5
R704	C-2
R705	B-6
R706	A-6
R707	A-6
R708	A-6
R709	A-6
R710	A-6
R711	C-2
R712	B-6
R713	B-6
R714	D-2
R715	D-2
R716	B-6
R717	B-6
R718	A-6
R719	D-2
R720	D-1
R721	A-6
R722	A-6
R723	A-6
R724	A-6
R725	A-6
R726	C-2
R727	C-2
R728	C-2
R729	C-2
R730	C-2
R731	C-1
R732	C-2
R733	C-1
R734	C-1
R735	C-1
R736	C-1
R737	C-1
R738	C-2
R740	C-1
R741	C-1
R742	A-6
R743	A-6
R744	B-6
R745	D-2
R746	D-2
R747	A-6
R748	C-2
R749	D-1
R750	A-6
R751	D-1
R752	D-1
R753	D-1
R754	B-6
R757	A-6
R758	C-2
R761	A-6
R762	A-6
Resistor Array	
RA302	D-5
RA303	C-7
RA304	C-5
RA305	D-6
RA306	C-5
RA307	C-4
Wire	
W201	A 5
W207	A-5
W208	A-5
W303	A-2
W305	C-4
W306	B-2
W307	A-3
W309	C-4

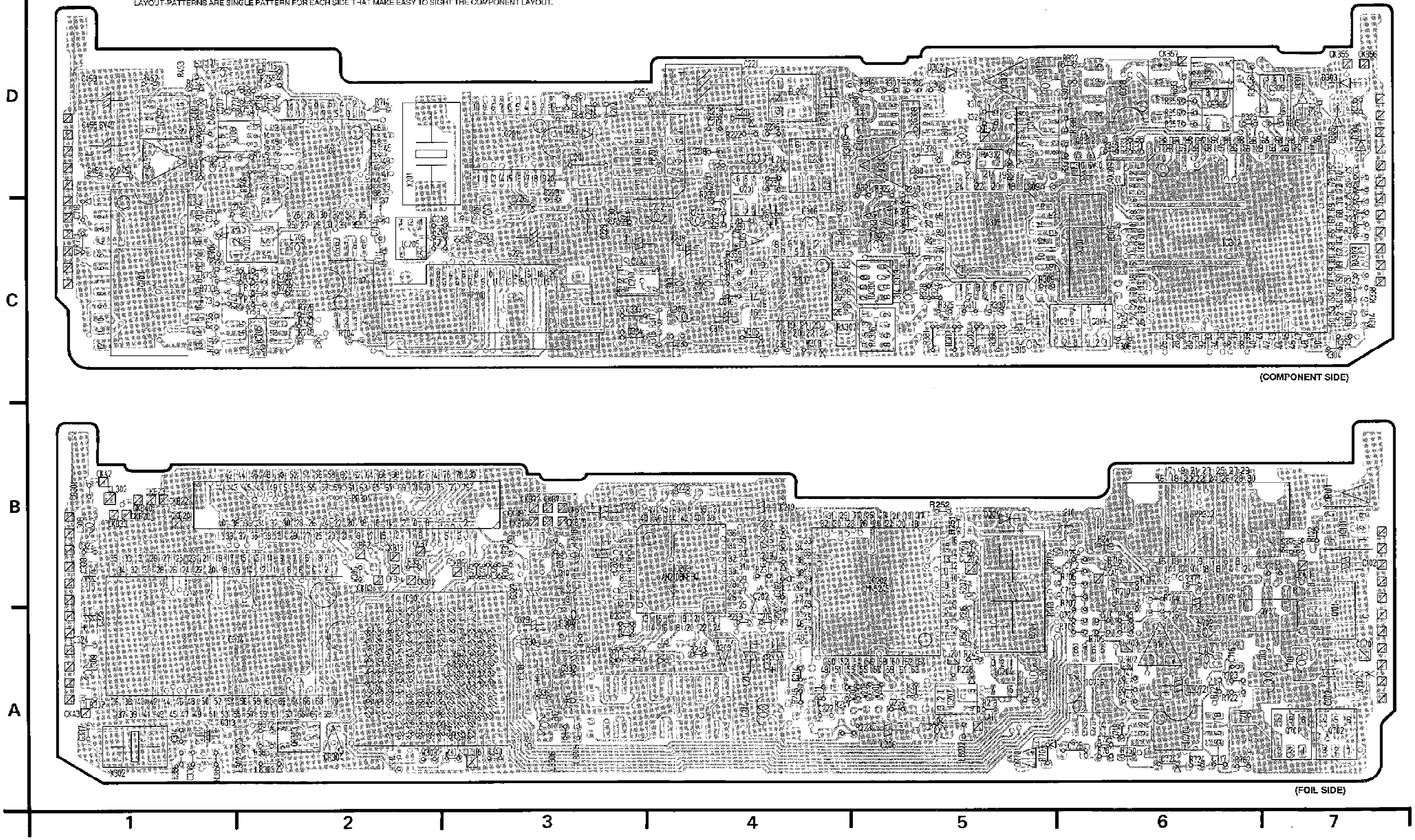
ADDRESS INFORMATION

3-33. CAMERA [Camera Connection, Sensor, Lens Drive Section] C.B.A. (VEP23450A)

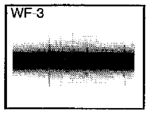


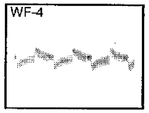


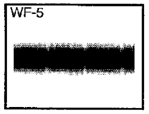
NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

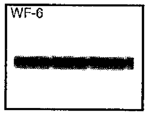

D
C
B
A
(COMPONENT SIDE)
(FOIL SIDE)
1
2
3
4
5
6
7

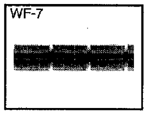
Back Page:
FRONT C.B.A. Section

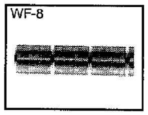

WF-3

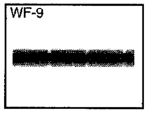

WF-4

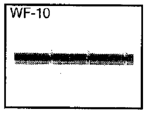

WF-5

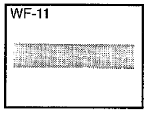

WF-6

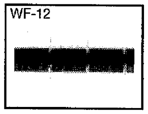

WF-7

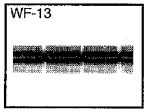

WF-8

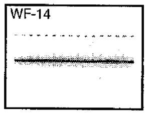

WF-9

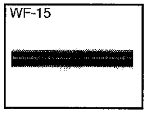

WF-10

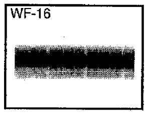

WF-11

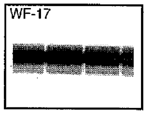

WF-12

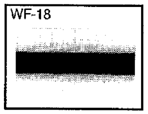

WF-13

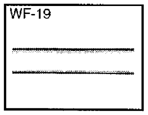

WF-14

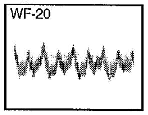

WF-15

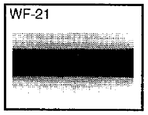

WF-16

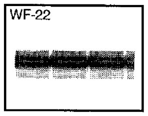

WF-17


WF-18


WF-19


WF-20


WF-21


WF-22

Checking Point of the CSP IC3801

CSP IC3801		CHECK POINT		WF No.	REMARKS
PIN	NAME				
1	GND	GND	—	—	
2	ADB5	RA3807-2	B-11	—	GND
3	ADB4	RA3807-4	B-11	—	GND
4	ADB3	RA3807-6	B-11	—	GND
5	ADB2	RA3807-8	B-11	—	GND
6	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
7	ADB1	RA3808-2	B-11	—	GND
8	ADB0	RA3808-4	B-11	—	GND
9	ADEN	R3841 - (UPPER)	B-6	—	
10	BKRDY	—	—	—	
11	GND	GND	—	—	
12	UPPEN	—	—	—	
13	CYCLD	—	—	—	
14	CYCLS	GND	—	—	
15	CLK26	—	—	—	
16	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
17	/RST	R3803 - (UPPER)	B-6	WF-1	VTR MAIN C.B.A. (F)
18	FRP	IC3001-58	D-3	WF-2	VTR MAIN C.B.A. (C)
19	VFRP	R3845 - (UPPER)	B-6	WF-1	VTR MAIN C.B.A. (F)
20	TEST0	GND	—	—	
21	GND	GND	—	—	
22	TEST1	GND	—	—	
23	SI/TEST2	GND	—	—	
24	SO	—	—	—	
25	SCK	—	—	—	
26	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
27	/SEN	—	—	—	
28	TMS	IC3001-147	B-2	WF-3	VTR MAIN C.B.A. (C)
29	TCK	IC3001-148	B-2	WF-3	
30	/TRST	R3803 - (UPPER)	B-2	WF-1	VTR MAIN C.B.A. (F)
31	GND	GND	—	—	
32	TDI	PP3001-51	A-5	WF-4	VTR MAIN C.B.A. (F)
33	TDO	IC3201-144	B-5	WF-5	VTR MAIN C.B.A. (C)
34	/LISO	R3801 - (UPPER)	B-6	WF-6	VTR MAIN C.B.A. (F)
35	LLREC	—	—	—	
36	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
37	LD3	RA3809-3	B-12	—	GND
38	LD2	RA3809-1	B-12	—	GND
39	LD1	—	—	—	
40	LD0	—	—	—	
41	LCTLI	—	—	—	
42	LCTLO	—	—	—	
43	LSYSCLK	—	—	—	
44	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
45	GND	GND	—	—	
46	D GND	GND	—	—	
47	D VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
48	PC0	RA3803-3	B-12	—	GND
49	PC1	RA3803-1	B-12	—	GND
50	PC2	R3804 - (LOWER)	B-6	WF-7	VTR MAIN C.B.A. (F)
51	LREQ	—	—	—	
52	CTLO	—	—	—	
53	CTLI	—	—	—	
54	D0	—	—	—	
55	D1	—	—	—	
56	SYSCLK	—	—	—	
57	D VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
58	D GND	GND	—	—	
59	A GND	GND	—	—	
60	A GND	GND	—	—	
61	TP BIAS	C3807 - (LEFT)	C-6	WF-8	VTR MAIN C.B.A. (F)
62	A GND	GND	—	—	
63	A GND	GND	—	—	
64	A VCC	C3809 - (LEFT)	C-6	WF-8	VTR MAIN C.B.A. (F)
65	A VCC	C3826(+) - (UPPER)	B-6	—	DIF 3V
66	CPS	R3806 - (LEFT)	C-6	WF-9	VTR MAIN C.B.A. (F)
67	RI	R3815 - (LEFT)	C-6	WF-10	
68	RO	R3807 - (LEFT)	C-6	WF-8	
69	TPB−	R3814 - (LEFT)	C-7	WF-8	
70	TPB+	R3813 - (LEFT)	C-7	WF-8	
71	TPA−	R3812 - (LEFT)	C-6	WF-8	
72	TPA+	R3811 - (LEFT)	C-6	WF-8	
73	XO	—	—	—	
74	XI	C3827 - (LOWER)	C-5	WF-11	VTR MAIN C.B.A. (F)
75	PLL GND	GND	—	—	
76	PLL GND	GND	—	—	
77	PLL VDD	C3825(+) - (UPPER)	C-7	—	DIF 3V
78	PLL FLT	C3813 - (LOWER)	C-6	WF-10	VTR MAIN C.B.A. (F)
79	PWRDN	—	—	—	
80	AVCC	C3826(+) - (UPPER)	B-6	—	DIF 3V
81	/ISO	R3809 - (LOWER)	C-6	—	
82	/RESET	IC3201-84	C-5	WF-12	VTR MAIN C.B.A. (C)
83	TESTM2	RA3805-3	C-6	—	
84	TESTM1	RA3805-1	C-6	—	
85	CNA	—	—	—	
86	LPS	RA3804-3	C-6	—	
87	C/LKON	RA3804-1	C-6	—	
88	DVSS	GND	—	—	
89	GND	GND	—	—	
90	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
91	LPWRDN	—	—	—	
92	LCNA	—	—	—	
93	RAMEZ	GND	—	—	
94	NTCLK	GND	—	—	
95	GND	GND	—	—	
96	NTOUT	—	—	—	
97	NTZIHZ	GND	—	—	
98	CYCLEIN	GND	—	—	
99	/INTP	IC2001-88	A-3	WF-13	VTR MAIN C.B.A. (C)
100	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
101	VCCA (2/3)	C3824(+) - (RIGHT)	C-5	—	REG D2V
102	AD15	IC2001-154	B-4	WF-14	VTR MAIN C.B.A. (C)
103	AD14	IC2001-153	B-4	WF-14	
104	AD13	IC2001-152	B-4	WF-14	
105	AD12	IC2001-151	B-4	WF-14	
106	GND	GND	—	—	
107	AD11	IC2001-150	B-4	WF-14	VTR MAIN C.B.A. (C)
108	AD10	IC2001-149	B-4	WF-14	
109	AD9	IC2001-148	B-4	WF-14	
110	AD8	IC2001-147	B-4	WF-14	
111	VCCA (2/3)	C3824(+) - (RIGHT)	C-5	—	REG D 2V
112	AD7	IC2001-146	B-4	WF-14	VTR MAIN C.B.A. (C)
113	AD6	IC2001-145	B-4	WF-14	
114	AD5	IC2001-144	B-4	WF-14	
115	AD4	IC2001-143	B-4	WF-14	
116	GND	GND	—	—	
117	AD3	IC2001-142	B-4	WF-14	VTR MAIN C.B.A. (C)
118	AD2	IC2001-141	B-4	WF-14	
119	AD1	IC2001-140	B-4	WF-14	
120	AD0	IC2001-139	B-4	WF-14	
121	GND	GND	—	—	
122	/LCNTD	R3842 - (LOWER)	C-5	WF-15	VTR MAIN C.B.A. (F)
123	/RD	—	—	—	
124	ALE	IC2001-135	A-4	WF-16	VTR MAIN C.B.A. (C)
125	/DC	IC2001-133	A-4	WF-17	
126	BCLK	IC2001-132	A-4	WF-18	
127	VCCB (2/3)	C3824(+) - (RIGHT)	C-5	—	REG D 2V
128	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
129	VCCB (2/3)	C3824(+) - (RIGHT)	C-5	—	REG D 2V
130	AD15/DBA0	IC3201-151	B-5	WF-19	VTR MAIN C.B.A. (C)
131	AD14/DBA1	IC3201-152	B-5	WF-19	
132	AD13/DBA2	IC3201-153	B-5	WF-19	
133	AD12/DBA3	IC3201-154	B-5	WF-19	
134	ADB11/SMPA	IC3201-155	B-5	WF-19	
135	GND	GND	—	—	
136	ADB10/DBB0	RA3806-2	B-11	—	GND
137	ADB9/DBB1	RA3806-4	B-11	—	GND
138	ADB8/DBB2	RA3806-6	B-11	—	GND
139	ADB7/DBB3	RA3806-8	B-11	—	GND
140	ADB6/SMPB	R3834 - (RIGHT)	B-5	WF-20	VTR MAIN C.B.A. (F)
141	VCCB (2/3)	C3824(+) - (RIGHT)	C-5	—	REG D 2V
142	CLK18	IC3201-3	B-6	WF-21	VTR MAIN C.B.A. (C)
143	VCC	C3825(+) - (UPPER)	C-7	—	DIF 3V
144	SSP	IC3201-148	B-5	WF-22	VTR MAIN C.B.A. (C)

VTR MAIN C.B.A. (F): FOIL SIDE / (C):COMPONENT SIDE

3-34. VTR MAIN [VTR Main Connection, System Control & Servo, Video 1, Video 2, LCD, Digital I/F, Audio, Sound Title Section] C.B.A. (VEP03E26A)

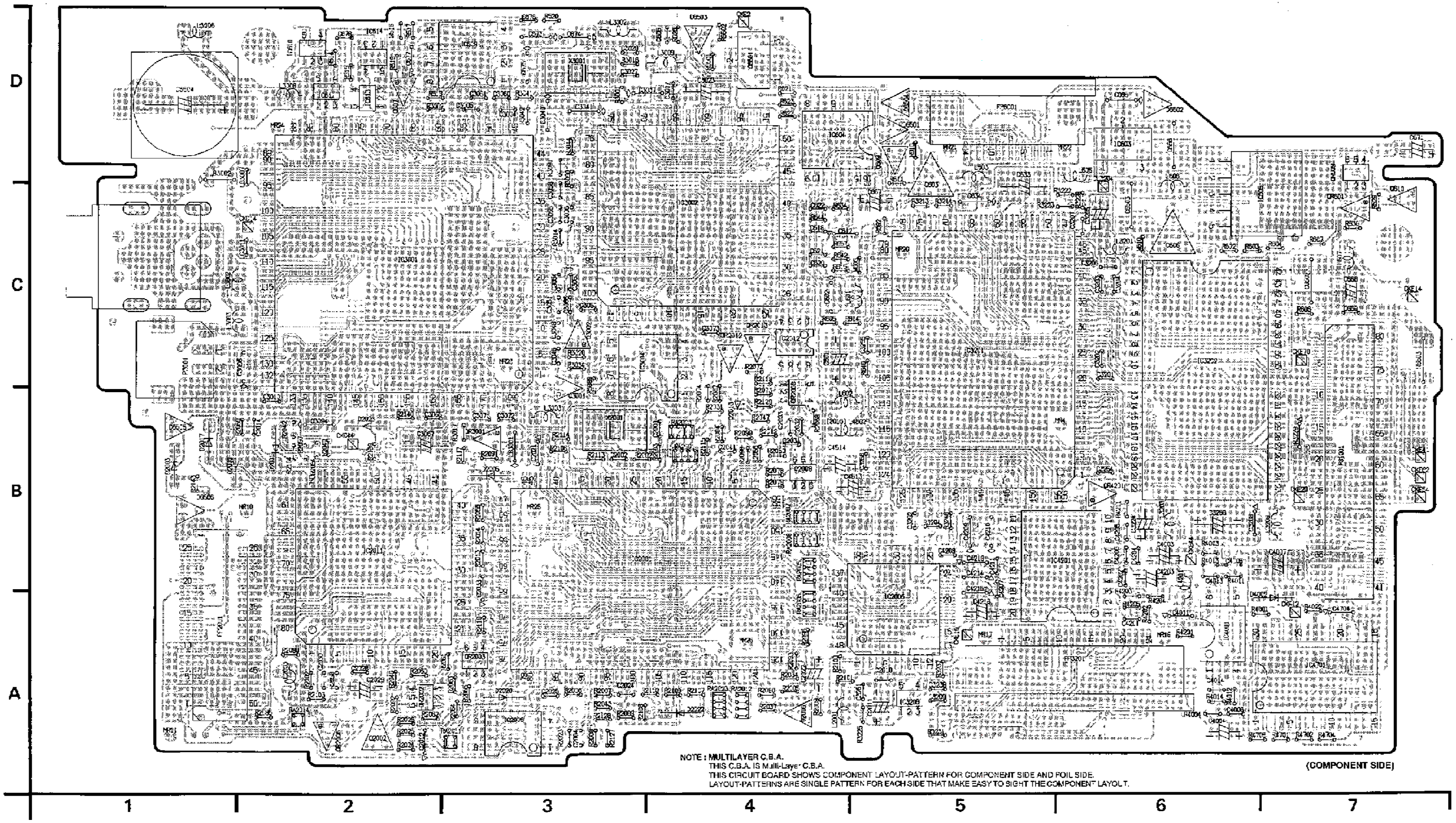
MAIN C.B.A. (1)

Integrated Circuit		
IC601	D-2	Ⓕ
IC602	D-3	Ⓕ
IC603	D-6	Ⓒ
IC604	D-4	Ⓒ
IC605	D-7	Ⓒ
IC606	C-6	Ⓒ
IC609	D-3	Ⓒ
IC610	D-2	Ⓒ
IC611	D-2	Ⓒ
IC613	D-2	Ⓒ
IC614	D-2	Ⓒ
IC2001	B-4	Ⓒ
IC2002	B-5	Ⓕ
IC2003	B-4	Ⓕ
IC2004	B-4	Ⓕ
IC2005	A-3	Ⓒ
IC2006	A-5	Ⓒ
IC2007	A-5	Ⓕ
IC2008	B-5	Ⓕ
IC2009	B-7	Ⓕ
IC2010	A-6	Ⓕ
IC2011	B-2	Ⓒ
IC2012	C-4	Ⓒ
IC2013	B-6	Ⓕ
IC2014	A-5	Ⓕ
IC2015	D-7	Ⓕ
IC3001	C-2	Ⓒ
IC3002	C-4	Ⓒ
IC3003	C-4	Ⓕ
IC3004	C-1	Ⓒ
IC3005	D-5	Ⓕ
IC3006	C-2	Ⓕ
IC3007	D-6	Ⓕ
IC3201	C-5	Ⓒ
IC3202	C-6	Ⓒ
IC3203	A-3	Ⓕ
IC3204	C-3	Ⓕ
IC3205	A-5	Ⓒ
IC3801	C-6	Ⓕ
IC4001	A-6	Ⓒ
IC4201	B-6	Ⓒ
IC4501	B-3	Ⓕ
IC4701	A-7	Ⓒ
IC6501	A-6	Ⓕ
IC6502	B-6	Ⓕ
IC6503	A-6	Ⓕ
IC6505	D-6	Ⓕ
IC6506	D-6	Ⓕ
Transistor		
Q601	C-2	Ⓕ
Q602	C-2	Ⓕ
Q603	D-5	Ⓒ
Q604	C-2	Ⓕ
Q605	C-1	Ⓕ
Q606	B-1	Ⓕ
Q607	D-2	Ⓒ
Q608	B-1	Ⓕ
Q609	D-5	Ⓒ
Q610	C-7	Ⓒ
Q611	C-1	Ⓕ
Q2001	B-5	Ⓕ
Q2002	A-2	Ⓒ
Q2003	A-4	Ⓕ
Q2006	B-4	Ⓕ
Q2008	B-4	Ⓒ
Q3001	C-3	Ⓒ
Q3002	C-3	Ⓒ
Q3201	A-3	Ⓕ
Q3202	B-2	Ⓕ
Q3203	A-3	Ⓕ
Q3204	A-4	Ⓕ
Q4001	A-2	Ⓕ
Q4701	A-1	Ⓕ
Q4702	A-1	Ⓕ
Q6501	D-4	Ⓒ
Transistor & Resistor		
QR601	C-7	Ⓒ
QR604	A-1	Ⓕ
QR605	A-1	Ⓕ
QR606	C-1	Ⓕ
QR607	C-1	Ⓕ
QR609	D-7	Ⓒ
QR2001	B-7	Ⓕ
QR2002	A-2	Ⓒ
QR2003	A-3	Ⓒ
QR2004	A-4	Ⓕ
QR2005	A-4	Ⓕ
QR2006	A-2	Ⓒ
QR2007	A-5	Ⓕ
QR2008	C-4	Ⓒ
QR2009	B-5	Ⓕ
QR2010	B-5	Ⓕ
QR2011	B-7	Ⓕ
QR2012	C-4	Ⓒ
QR2013	C-4	Ⓒ
QR3001	B-3	Ⓒ
QR4001	B-2	Ⓕ
QR4002	B-2	Ⓕ
QR4003	B-2	Ⓕ
QR4201	B-6	Ⓒ
QR4703	A-2	Ⓕ
Test Point		
CL3001	D-6	Ⓕ
CL3002	C-5	Ⓕ
CL3004	C-1	Ⓕ
CL3202	B-3	Ⓕ
CL3203	C-4	Ⓕ
CL3204	D-6	Ⓒ
Diode		
D2001	B-2	Ⓒ
D2002	B-5	Ⓕ
D2003	B-1	Ⓒ
D2004	A-5	Ⓕ
D2005	B-3	Ⓒ
D2006	A-4	Ⓒ
D2007	A-4	Ⓕ
D2008	A-4	Ⓕ
D2010	B-2	Ⓒ
D2011	A-5	Ⓕ
D2012	B-5	Ⓕ
D2013	B-4	Ⓒ
D2015	A-3	Ⓕ
D2016	A-4	Ⓕ
D2017	B-1	Ⓒ
D2018	A-4	Ⓕ
D2020	A-3	Ⓒ
D2021	A-5	Ⓕ
D2022	A-4	Ⓒ
D2023	B-2	Ⓒ
D2024	B-5	Ⓕ
D2025	B-6	Ⓕ
D3201	A-3	Ⓕ
D3202	A-4	Ⓕ
D4001	B-1	Ⓕ
D4002	B-7	Ⓒ
D6501	D-5	Ⓒ
D6502	D-6	Ⓒ
D6503	D-4	Ⓒ
D6504	D-5	Ⓒ
D6505	B-1	Ⓒ
D6506	B-1	Ⓒ
Connector		
FP3201	A-6	Ⓒ
FP4001	B-1	Ⓕ
FP6001	D-5	Ⓒ
FP6002	A-7	Ⓕ
P3001	C-1	Ⓒ
PP2001	A-1	Ⓒ
PP3001	A-5	Ⓕ
PP3002	B-2	Ⓕ
PS1001	B-7	Ⓒ
PS3001	C-2	Ⓕ
PS3002	C-6	Ⓕ
Crystal Oscillator		
X2001	B-3	Ⓒ
X2002	C-5	Ⓕ
X2003	A-6	Ⓕ
X3001	D-3	Ⓒ
X3003	C-4	Ⓕ
Coil		
L601	C-5	Ⓒ
L602	C-5	Ⓒ
L603	D-5	Ⓒ
L605	D-6	Ⓒ
L606	D-6	Ⓒ
L607	C-7	Ⓒ
L2001	A-5	Ⓒ
L2002	B-5	Ⓕ
L2003	A-2	Ⓒ
L3002	D-3	Ⓒ
L3003	B-3	Ⓒ
L3004	C-6	Ⓕ
L3005	D-4	Ⓕ
L3006	D-1	Ⓒ
L3008	D-2	Ⓒ
L3009	D-4	Ⓒ
L3010	B-2	Ⓕ
L3011	B-2	Ⓕ
L3201	C-6	Ⓒ
L3202	A-3	Ⓕ
L3203	B-6	Ⓒ
L3204	B-3	Ⓕ

ADDRESS INFORMATION

Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

COMPONENT SIDE



NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

(COMPONENT SIDE)

Back Page:
CAMERA C.B.A. Section

MAIN C.B.A. (2)

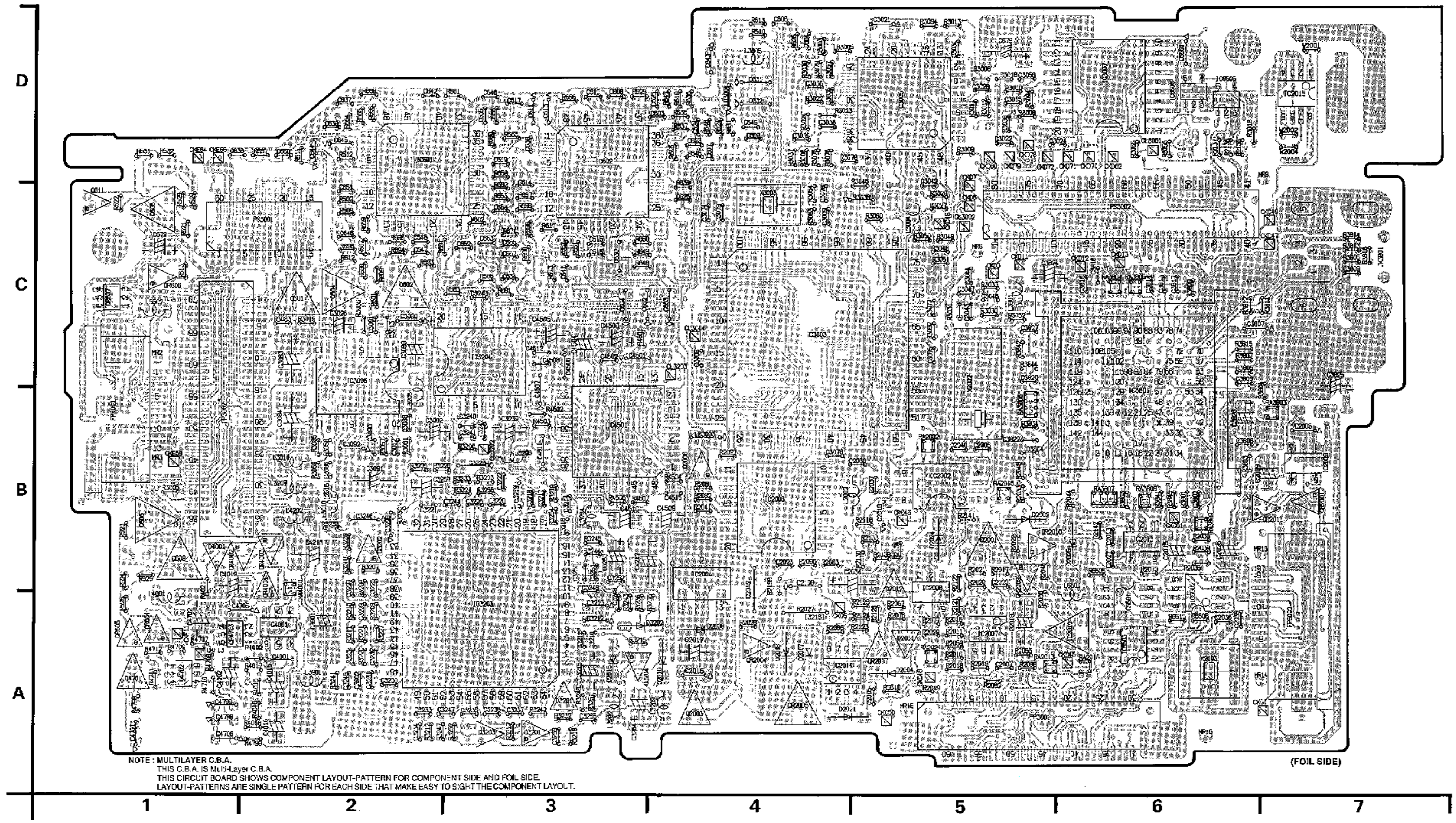
L3205	C-2	Ⓕ	L4502	B-5	Ⓒ	**Capacitor**			C611	D-3	Ⓕ	C623	D-4	Ⓕ	C638	D-3	Ⓕ	C650	D-2	Ⓕ	C665	D-6	Ⓒ
L3206	B-3	Ⓕ	L6501	B-6	Ⓕ	C601	C-4	Ⓒ	C612	C-5	Ⓒ	C624	D-4	Ⓕ	C639	D-2	Ⓕ	C651	D-2	Ⓕ	C666	D-6	Ⓒ
L3207	B-2	Ⓕ	L6502	C-1	Ⓕ	C602	C-4	Ⓒ	C613	D-3	Ⓕ	C625	D-4	Ⓕ	C640	D-3	Ⓕ	C652	C-3	Ⓕ	C667	C-5	Ⓒ
L3208	B-7	Ⓒ	LB3001	B-3	Ⓒ	C603	D-4	Ⓕ	C614	D-3	Ⓕ	C626	C-4	Ⓕ	C641	C-3	Ⓕ	C653	C-3	Ⓕ	C668	C-7	Ⓒ
L3209	A-4	Ⓕ	LB3002	D-1	Ⓒ	C604	D-4	Ⓕ	C615	C-3	Ⓕ	C630	C-3	Ⓕ	C642	D-3	Ⓕ	C654	C-3	Ⓕ	C669	C-7	Ⓒ
L3801	C-5	Ⓕ	LB3003	B-4	Ⓕ	C605	D-4	Ⓒ	C616	C-3	Ⓕ	C631	D-4	Ⓕ	C643	D-4	Ⓕ	C655	C-3	Ⓕ	C671	D-7	Ⓒ
L3802	C-2	Ⓒ	LB3005	D-5	Ⓕ	C606	D-4	Ⓕ	C617	D-3	Ⓕ	C632	D-4	Ⓕ	C644	D-2	Ⓕ	C656	D-3	Ⓕ	C672	C-1	Ⓕ
L3803	C-2	Ⓒ	LB3006	D-5	Ⓕ	C607	D-4	Ⓕ	C618	C-4	Ⓒ	C633	D-5	Ⓒ	C645	D-2	Ⓕ	C657	C-3	Ⓕ	C673	D-3	Ⓒ
L3901	A-2	Ⓕ	LB3007	D-2	Ⓒ	C608	D-3	Ⓕ	C619	D-3	Ⓕ	C634	C-5	Ⓒ	C646	C-2	Ⓕ	C658	C-3	Ⓕ	C674	D-3	Ⓒ
L4001	A-1	Ⓕ				C609	D-4	Ⓕ	C620	C-4	Ⓒ	C635	D-3	Ⓕ	C647	C-2	Ⓕ	C662	C-4	Ⓕ	C675	D-3	Ⓒ
L4201	B-6	Ⓒ				C610	D-3	Ⓕ	C621	C-4	Ⓒ	C636	D-2	Ⓕ	C648	C-2	Ⓕ	C663	C-4	Ⓕ	C676	D-3	Ⓒ
L4202	B-2	Ⓕ							C622	C-4	Ⓒ	C637	D-2	Ⓕ	C649	D-4	Ⓕ	C664	B-3	Ⓕ	C677	D-2	Ⓒ

C678	D-2	Ⓒ	C2011	A-5	Ⓒ	C2023	B-4	Ⓕ	C2035	A-6	Ⓕ	C3006	C-3	Ⓒ	C3022	D-5	Ⓕ	C3040	D-3	Ⓒ	C3054	C-3	Ⓒ
C670	D-5	Ⓕ	C2012	A-2	Ⓒ	C2024	A-3	Ⓒ	C2036	A-6	Ⓕ	C3007	D-4	Ⓒ	C3023	D-4	Ⓒ	C3041	D-3	Ⓒ	C3055	C-3	Ⓒ
C2001	B-4	Ⓒ	C2013	B-6	Ⓕ	C2025	A-3	Ⓒ	C2037	B-5	Ⓕ	C3008	C-4	Ⓕ	C3024	D-6	Ⓕ	C3042	D-5	Ⓕ	C3056	D-5	Ⓕ
C2002	B-3	Ⓒ	C2014	B-2	Ⓒ	C2026	A-6	Ⓕ	C2038	B-5	Ⓕ	C3009	C-4	Ⓕ	C3026	C-2	Ⓕ	C3043	C-5	Ⓕ	C3057	D-5	Ⓕ
C2003	B-4	Ⓒ	C2015	B-6	Ⓕ	C2027	B-6	Ⓕ	C2040	B-5	Ⓕ	C3010	B-2	Ⓒ	C3027	D-3	Ⓒ	C3044	C-5	Ⓕ	C3058	D-3	Ⓒ
C2004	A-3	Ⓒ	C2016	A-4	Ⓕ	C2028	A-2	Ⓒ	C2041	B-4	Ⓒ	C3011	C-2	Ⓒ	C3028	D-5	Ⓕ	C3045	C-3	Ⓒ	C3060	D-3	Ⓒ
C2005	A-5	Ⓕ	C2017	A-4	Ⓕ	C2029	A-2	Ⓒ	C2042	B-4	Ⓕ	C3012	B-2	Ⓕ	C3030	D-5	Ⓕ	C3046	C-5	Ⓕ	C3061	D-3	Ⓒ
C2006	B-5	Ⓕ	C2018	A-5	Ⓕ	C2030	A-2	Ⓒ	C2199	B-4	Ⓕ	C3013	C-2	Ⓕ	C3035	D-5	Ⓕ	C3047	C-5	Ⓕ	C3065	B-3	Ⓒ
C2007	A-5	Ⓕ	C2019	B-5	Ⓕ	C2031	B-4	Ⓒ	C3002	B-3	Ⓕ	C3015	D-5	Ⓕ	C3036	D-4	Ⓕ	C3048	C-3	Ⓒ	C3066	C-3	Ⓒ
C2008	B-7	Ⓕ	C2020	B-5	Ⓕ	C2032	B-4	Ⓒ	C3003	D-4	Ⓕ	C3018	D-5	Ⓕ	C3037	D-4	Ⓒ	C3050	C-3	Ⓒ	C3067	B-2	Ⓒ
C2009	B-7	Ⓕ	C2021	B-3	Ⓒ	C2033	B-3	Ⓒ	C3004	D-3	Ⓒ	C3020	D-3	Ⓒ	C3038	D-4	Ⓕ	C3051	C-3	Ⓒ	C3071	B-3	Ⓒ
C2010	A-5	Ⓒ	C2022	A-4	Ⓒ	C2034	B-5	Ⓕ	C3005	D-3	Ⓒ	C3021	D-5	Ⓕ	C3039	D-4	Ⓕ	C3053	C-3	Ⓒ	C3072	B-3	Ⓒ

ADDRESS INFORMATION

Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

FOIL SIDE



NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

MAIN C.B.A. (3)

C3073	C-4 Ⓒ	C3807	C-7 Ⓕ	R519	D-2 Ⓒ	R2004	B-4 Ⓒ	R2099	B-4 Ⓒ	R3059	B-2 Ⓕ	R4014	A-6 Ⓒ
C3074	C-4 Ⓕ	C3808	C-7 Ⓕ	R520	D-3 Ⓒ	R2005	A-4 Ⓒ	R2100	A-5 Ⓒ	R3060	C-5 Ⓕ	R4015	A-2 Ⓕ
C3075	C-5 Ⓕ	C3809	C-6 Ⓕ	R521	C-1 Ⓕ	R2006	A-3 Ⓒ	R2101	A-5 Ⓒ	R3061	B-2 Ⓕ	R4016	A-2 Ⓕ
C3076	B-4 Ⓕ	C3813	C-6 Ⓕ	R522	C-1 Ⓕ	R2007	A-3 Ⓒ	R2102	A-2 Ⓒ	R3075	D-4 Ⓕ	R4017	A-2 Ⓕ
C3077	C-5 Ⓕ	C3814	C-6 Ⓕ	R523	B-1 Ⓕ	R2008	A-3 Ⓒ	R2103	A-2 Ⓒ	R3076	D-4 Ⓕ	R4018	A-2 Ⓕ
C3078	C-4 Ⓕ	C3816	C-6 Ⓕ	R524	B-1 Ⓕ	R2009	A-4 Ⓒ	R2104	B-2 Ⓒ	R3078	D-5 Ⓕ	R4021	B-1 Ⓕ
C3079	C-4 Ⓕ	C3817	C-6 Ⓕ	R525	B-1 Ⓕ	R2011	A-5 Ⓕ	R2106	B-3 Ⓒ	R3079	D-4 Ⓕ	R4022	A-7 Ⓒ
C3080	C-2 Ⓕ	C3818	C-6 Ⓕ	R526	A-1 Ⓕ	R2012	B-4 Ⓒ	R2107	A-4 Ⓒ	R3083	C-2 Ⓕ	R4201	A-6 Ⓒ
C3081	C-2 Ⓕ	C3820	C-5 Ⓕ	R527	C-1 Ⓕ	R2013	B-3 Ⓒ	R2108	A-4 Ⓒ	R3085	B-2 Ⓕ	R4202	A-6 Ⓒ
C3083	C-2 Ⓕ	C3822	B-5 Ⓕ	R528	C-1 Ⓕ	R2014	B-3 Ⓒ	R2109	A-4 Ⓒ	R3089	C-3 Ⓒ	R4203	B-6 Ⓒ
C3084	B-2 Ⓕ	C3824	C-6 Ⓕ	R529	C-7 Ⓒ	R2015	A-5 Ⓕ	R2110	A-4 Ⓒ	R3090	D-3 Ⓒ	R4204	B-6 Ⓒ
C3086	B-2 Ⓕ	C3825	C-7 Ⓕ	R530	C-7 Ⓒ	R2016	A-5 Ⓕ	R2113	B-3 Ⓒ	R3091	D-3 Ⓒ	R4205	B-6 Ⓒ
C3088	B-2 Ⓕ	C3826	B-6 Ⓕ	R531	D-1 Ⓕ	R2017	B-5 Ⓕ	R2114	B-3 Ⓒ	R3094	D-5 Ⓕ	R4211	B-6 Ⓒ
C3089	C-2 Ⓕ	C3827	C-5 Ⓕ	R532	D-1 Ⓕ	R2018	A-5 Ⓕ	R2115	B-4 Ⓒ	R3203	B-3 Ⓕ	R4501	C-4 Ⓕ
C3090	B-2 Ⓕ	C3901	A-2 Ⓕ	R601	C-2 Ⓕ	R2019	A-5 Ⓕ	R2116	B-5 Ⓕ	R3204	B-5 Ⓒ	R4502	B-3 Ⓕ
C3091	B-2 Ⓕ	C3902	A-2 Ⓕ	R602	C-6 Ⓒ	R2020	B-5 Ⓕ	R2117	B-3 Ⓒ	R3205	B-2 Ⓕ	R4503	B-3 Ⓕ
C3092	B-2 Ⓕ	C4001	A-2 Ⓕ	R603	C-7 Ⓒ	R2021	B-5 Ⓕ	R2118	A-3 Ⓒ	R3206	B-3 Ⓕ	R4504	B-4 Ⓕ
C3094	B-2 Ⓒ	C4002	A-2 Ⓕ	R604	C-7 Ⓒ	R2022	B-5 Ⓕ	R2119	C-4 Ⓒ	R3207	B-2 Ⓕ	R4506	B-3 Ⓕ
C3096	C-2 Ⓒ	C4003	B-6 Ⓒ	R605	C-4 Ⓒ	R2023	A-3 Ⓒ	R2121	A-5 Ⓕ	R3208	B-2 Ⓕ	R4507	B-4 Ⓕ
C3201	C-6 Ⓒ	C4004	A-6 Ⓒ	R606	C-7 Ⓒ	R2024	A-2 Ⓒ	R2122	B-5 Ⓕ	R3209	A-2 Ⓕ	R4701	A-7 Ⓒ
C3202	C-6 Ⓒ	C4005	B-6 Ⓒ	R607	C-7 Ⓒ	R2025	A-2 Ⓒ	R2123	A-5 Ⓕ	R3210	A-2 Ⓕ	R4702	A-7 Ⓒ
C3203	C-6 Ⓒ	C4006	A-6 Ⓒ	R608	C-2 Ⓕ	R2026	A-2 Ⓒ	R2124	A-5 Ⓕ	R3211	A-2 Ⓕ	R4704	A-7 Ⓒ
C3204	C-6 Ⓒ	C4007	B-7 Ⓒ	R609	C-2 Ⓕ	R2027	A-4 Ⓕ	R2125	A-5 Ⓕ	R3212	A-2 Ⓕ	R4705	A-7 Ⓒ
C3205	C-6 Ⓒ	C4011	A-6 Ⓒ	R610	D-5 Ⓒ	R2028	A-4 Ⓕ	R2126	A-5 Ⓕ	R3213	C-5 Ⓒ	R4707	A-1 Ⓕ
C3206	C-6 Ⓒ	C4012	B-2 Ⓕ	R611	D-5 Ⓒ	R2029	A-5 Ⓕ	R2127	A-3 Ⓒ	R3214	C-5 Ⓒ	R4708	A-1 Ⓕ
C3207	C-6 Ⓒ	C4013	B-6 Ⓒ	R612	C-2 Ⓕ	R2031	B-4 Ⓒ	R2128	A-3 Ⓒ	R3215	A-4 Ⓕ	R4709	A-1 Ⓕ
C3208	B-7 Ⓒ	C4014	A-6 Ⓒ	R613	C-1 Ⓕ	R2033	B-5 Ⓕ	R2129	B-4 Ⓒ	R3217	A-3 Ⓕ	R4710	A-1 Ⓕ
C3209	A-5 Ⓒ	C4015	A-2 Ⓕ	R614	C-5 Ⓒ	R2034	A-4 Ⓒ	R2130	B-5 Ⓕ	R3218	A-3 Ⓕ	R4711	A-1 Ⓕ
C3210	A-3 Ⓕ	C4016	A-2 Ⓕ	R615	C-4 Ⓒ	R2035	B-6 Ⓕ	R2133	B-5 Ⓕ	R3219	B-3 Ⓕ	R4712	A-1 Ⓕ
C3211	A-3 Ⓕ	C4201	A-6 Ⓒ	R616	D-4 Ⓕ	R2036	A-5 Ⓕ	R2134	B-5 Ⓕ	R3220	A-2 Ⓕ	R4798	A-1 Ⓕ
C3212	A-3 Ⓕ	C4202	B-6 Ⓒ	R617	C-3 Ⓕ	R2037	A-4 Ⓒ	R2135	D-6 Ⓕ	R3221	A-2 Ⓕ	R4799	A-2 Ⓕ
C3213	A-3 Ⓕ	C4203	B-6 Ⓒ	R619	D-4 Ⓕ	R2038	B-6 Ⓕ	R2136	D-6 Ⓕ	R3222	D-6 Ⓒ	R6501	D-4 Ⓒ
C3214	B-3 Ⓕ	C4204	B-6 Ⓒ	R621	D-4 Ⓒ	R2039	B-6 Ⓕ	R2137	D-6 Ⓕ	R3223	C-6 Ⓒ	R6502	D-4 Ⓒ
C3215	A-3 Ⓕ	C4205	B-6 Ⓒ	R622	D-4 Ⓒ	R2040	B-2 Ⓒ	R2138	B-5 Ⓕ	R3224	B-3 Ⓕ	R6503	C-7 Ⓒ
C3216	B-3 Ⓕ	C4206	B-6 Ⓒ	R623	D-4 Ⓒ	R2041	B-4 Ⓕ	R2139	B-2 Ⓒ	R3225	A-5 Ⓒ	R6505	B-6 Ⓕ
C3217	B-3 Ⓕ	C4207	B-5 Ⓒ	R624	D-4 Ⓕ	R2042	B-2 Ⓒ	R2140	B-2 Ⓒ	R3226	B-3 Ⓕ	R6506	A-6 Ⓕ
C3218	B-3 Ⓕ	C4208	B-5 Ⓒ	R625	D-4 Ⓕ	R2043	A-3 Ⓒ	R2141	B-5 Ⓕ	R3227	A-2 Ⓕ	R6510	A-5 Ⓕ
C3219	B-3 Ⓕ	C4209	B-5 Ⓒ	R626	D-4 Ⓒ	R2044	B-6 Ⓕ	R2142	B-6 Ⓕ	R3228	C-6 Ⓒ	R6515	A-6 Ⓕ
C3220	B-3 Ⓕ	C4210	B-5 Ⓒ	R629	D-4 Ⓕ	R2045	B-6 Ⓕ	R2143	B-1 Ⓒ	R3229	B-7 Ⓒ	**Resistor Array**	
C3221	B-2 Ⓕ	C4211	B-5 Ⓒ	R631	D-4 Ⓕ	R2046	A-2 Ⓒ	R2199	B-4 Ⓕ	R3230	B-2 Ⓕ		
C3222	B-3 Ⓕ	C4212	B-4 Ⓕ	R634	C-4 Ⓒ	R2047	B-4 Ⓒ	R3001	D-3 Ⓒ	R3231	A-5 Ⓒ	RA2001	B-4 Ⓒ
C3223	B-3 Ⓕ	C4213	B-2 Ⓕ	R635	D-4 Ⓕ	R2048	B-5 Ⓕ	R3002	D-3 Ⓒ	R3232	A-3 Ⓕ	RA2002	B-5 Ⓕ
C3224	B-6 Ⓒ	C4214	B-5 Ⓒ	R636	D-4 Ⓕ	R2049	A-5 Ⓕ	R3004	D-5 Ⓕ	R3233	B-3 Ⓕ	RA2003	B-4 Ⓒ
C3225	B-2 Ⓕ	C4215	B-5 Ⓒ	R637	D-4 Ⓕ	R2050	B-4 Ⓒ	R3005	B-1 Ⓕ	R3234	A-2 Ⓕ	RA2005	B-4 Ⓒ
C3226	B-3 Ⓕ	C4218	A-5 Ⓒ	R639	D-4 Ⓕ	R2052	A-5 Ⓕ	R3006	D-4 Ⓕ	R3235	A-4 Ⓕ	RA2006	A-4 Ⓒ
C3227	B-2 Ⓕ	C4219	B-5 Ⓒ	R640	C-5 Ⓒ	R2053	A-5 Ⓕ	R3008	D-5 Ⓕ	R3236	A-4 Ⓕ	RA2007	B-4 Ⓒ
C3228	B-2 Ⓕ	C4501	C-4 Ⓕ	R642	C-4 Ⓒ	R2054	B-2 Ⓒ	E3009	D-5 Ⓕ	R3237	A-5 Ⓒ	RA2008	B-4 Ⓒ
C3229	A-2 Ⓕ	C4502	C-3 Ⓕ	R644	C-4 Ⓒ	R2055	B-3 Ⓒ	R3010	D-5 Ⓕ	R3238	B-2 Ⓕ	RA2011	A-3 Ⓒ
C3230	A-2 Ⓕ	C4503	C-3 Ⓕ	R645	D-4 Ⓕ	R2056	B-4 Ⓒ	R3011	D-5 Ⓕ	R3239	B-2 Ⓕ	RA2012	A-4 Ⓒ
C3231	A-2 Ⓕ	C4504	C-3 Ⓕ	R646	D-4 Ⓕ	R2057	B-2 Ⓒ	R3012	D-5 Ⓕ	R3240	B-2 Ⓕ	RA2013	A-6 Ⓕ
C3232	A-2 Ⓕ	C4505	C-3 Ⓕ	R647	D-4 Ⓕ	R2058	A-2 Ⓒ	R3013	D-5 Ⓕ	R3241	A-2 Ⓕ	RA2014	A-2 Ⓒ
C3233	A-2 Ⓕ	C4506	C-3 Ⓕ	R648	C-4 Ⓕ	R2059	A-5 Ⓕ	R3014	C-3 Ⓒ	R3242	A-3 Ⓕ	RA2016	B-5 Ⓕ
C3234	A-2 Ⓕ	C4507	C-3 Ⓕ	R649	C-4 Ⓕ	R2060	A-2 Ⓒ	R3016	D-3 Ⓒ	R3243	A-3 Ⓕ	RA2018	A-6 Ⓕ
C3235	A-3 Ⓕ	C4508	C-3 Ⓕ	R650	C-4 Ⓕ	R2061	A-3 Ⓒ	R3017	B-3 Ⓒ	R3244	B-3 Ⓕ	RA2023	A-4 Ⓒ
C3236	A-3 Ⓕ	C4509	B-4 Ⓕ	R651	C-3 Ⓕ	R2062	A-3 Ⓒ	R3018	D-7 Ⓕ	R3245	B-3 Ⓕ	RA2024	A-5 Ⓕ
C3237	A-3 Ⓕ	C4510	B-3 Ⓕ	R652	C-3 Ⓕ	R2063	A-3 Ⓒ	R3019	C-2 Ⓕ	R3247	A-3 Ⓕ	RA3803	B-7 Ⓕ
C3238	A-5 Ⓒ	C4511	B-3 Ⓕ	R653	C-3 Ⓕ	R2064	A-3 Ⓒ	R3020	C-3 Ⓒ	R3248	B-5 Ⓒ	RA3804	C-6 Ⓕ
C3239	B-3 Ⓕ	C4512	C-3 Ⓕ	R656	D-3 Ⓕ	R2065	A-3 Ⓒ	R3022	D-4 Ⓕ	R3249	A-3 Ⓕ	RA3805	C-6 Ⓕ
C3240	B-3 Ⓕ	C4513	B-5 Ⓒ	R658	D-3 Ⓕ	R2066	A-4 Ⓕ	R3023	D-4 Ⓕ	R3251	A-3 Ⓕ	RA3806	B-5 Ⓕ
C3241	B-3 Ⓕ	C4514	B-4 Ⓒ	R659	C-2 Ⓕ	R2067	A-5 Ⓕ	R3024	D-4 Ⓕ	R3252	A-3 Ⓕ	RA3807	B-6 Ⓕ
C3242	B-3 Ⓕ	C4515	B-4 Ⓕ	R661	D-3 Ⓕ	R2068	A-5 Ⓕ	R3027	C-5 Ⓕ	R3254	B-3 Ⓕ	RA3808	B-6 Ⓕ
C3243	C-3 Ⓕ	C4701	A-1 Ⓕ	R663	D-3 Ⓕ	R2069	B-2 Ⓒ	R3028	C-5 Ⓕ	R3255	B-3 Ⓕ	RA3809	B-6 Ⓕ
C3244	B-3 Ⓕ	C4702	A-1 Ⓕ	R664	D-2 Ⓕ	R2070	B-6 Ⓕ	R3030	C-5 Ⓕ	R3801	B-6 Ⓕ	RA4001	B-2 Ⓕ
C3245	A-2 Ⓕ	C4704	A-7 Ⓒ	R665	D-2 Ⓕ	R2072	C-4 Ⓒ	R3031	C-5 Ⓕ	R3803	B-6 Ⓕ	**Wire**	
C3246	B-2 Ⓕ	C4705	A-2 Ⓕ	R666	D-2 Ⓕ	R2073	C-4 Ⓒ	R3032	C-5 Ⓕ	R3804	C-7 Ⓕ		
C3247	A-3 Ⓕ	C4706	A-1 Ⓕ	R667	D-2 Ⓕ	R2074	C-4 Ⓒ	R3033	C-5 Ⓕ	R3805	C-7 Ⓕ	W602	C-3 Ⓕ
C3248	A-3 Ⓕ	C4798	A-1 Ⓕ	R668	D-2 Ⓕ	R2076	A-5 Ⓕ	R3034	C-3 Ⓒ	R3806	C-6 Ⓕ	W606	C-5 Ⓒ
C3249	B-3 Ⓕ	C4799	A-1 Ⓕ	R673	C-3 Ⓕ	R2077	A-5 Ⓕ	R3035	C-5 Ⓕ	R3807	C-6 Ⓕ	W610	C-6 Ⓒ
C3250	B-3 Ⓕ	C6501	D-6 Ⓕ	R674	C-3 Ⓕ	R2078	B-4 Ⓒ	R3036	C-2 Ⓕ	R3809	C-6 Ⓕ	W2001	D-7 Ⓕ
C3251	B-3 Ⓕ	C6502	C-7 Ⓒ	R680	D-3 Ⓕ	R2079	B-4 Ⓒ	R3037	D-4 Ⓕ	R3811	C-7 Ⓕ	W2002	D-7 Ⓕ
C3252	B-3 Ⓕ	C6503	C-6 Ⓒ	R681	C-3 Ⓕ	R2080	A-4 Ⓒ	R3038	D-5 Ⓕ	R3812	C-7 Ⓕ	W2004	D-7 Ⓕ
C3253	B-3 Ⓕ	C6504	D-1 Ⓒ	R682	D-3 Ⓕ	R2081	B-4 Ⓕ	R3039	D-4 Ⓕ	R3813	C-7 Ⓕ		
C3254	B-6 Ⓒ	**Resistor**		R683	C-3 Ⓕ	R2082	B-4 Ⓕ	R3042	D-3 Ⓒ	R3814	C-7 Ⓕ		
C3255	C-5 Ⓒ			R685	C-3 Ⓕ	R2083	B-4 Ⓕ	R3044	D-3 Ⓒ	R3815	C-6 Ⓕ		
C3256	B-5 Ⓒ	R507	C-2 Ⓕ	R690	C-3 Ⓕ	R2085	A-2 Ⓒ	R3046	D-5 Ⓕ	R3816	C-7 Ⓕ		
C3257	B-2 Ⓕ	R508	C-2 Ⓕ	R691	C-3 Ⓕ	R2087	C-4 Ⓒ	R3048	C-5 Ⓕ	R3834	B-5 Ⓕ		
C3258	B-6 Ⓒ	R509	C-2 Ⓕ	R692	C-5 Ⓒ	R2088	B-4 Ⓒ	R3049	C-5 Ⓕ	R3842	C-5 Ⓕ		
C3259	A-3 Ⓕ	R510	D-4 Ⓕ	R693	C-3 Ⓕ	R2089	A-3 Ⓒ	R3050	C-5 Ⓕ	R3844	C-5 Ⓕ		
C3261	A-5 Ⓒ	R511	D-2 Ⓕ	R694	C-2 Ⓕ	R2090	A-2 Ⓒ	R3051	C-5 Ⓕ	R3845	B-6 Ⓕ		
C3262	B-5 Ⓒ	R512	D-2 Ⓕ	R695	C-2 Ⓕ	R2091	B-3 Ⓒ	R3052	C-5 Ⓕ	R4001	A-7 Ⓒ		
C3264	A-4 Ⓕ	R513	D-4 Ⓕ	R696	C-2 Ⓕ	R2092	A-2 Ⓒ	R3053	C-4 Ⓕ	R4002	A-2 Ⓕ		
C3265	A-3 Ⓕ	R514	D-2 Ⓒ	R697	C-3 Ⓕ	R2093	A-4 Ⓒ	R3054	C-4 Ⓕ	R4003	B-6 Ⓒ		
C3802	B-6 Ⓕ	R515	D-2 Ⓒ	R698	C-3 Ⓕ	R2095	A-4 Ⓒ	R3055	D-6 Ⓕ	R4004	A-6 Ⓒ		
C3803	B-5 Ⓕ	R516	D-2 Ⓒ	R699	C-3 Ⓕ	R2096	B-4 Ⓕ	R3056	D-6 Ⓕ	R4011	B-6 Ⓒ		
C3804	B-5 Ⓕ	R517	D-2 Ⓒ	R2002	B-4 Ⓒ	R2097	B-4 Ⓕ	R3057	B-2 Ⓕ	R4012	A-6 Ⓒ		
C3806	B-6 Ⓕ	R518	D-3 Ⓒ	R2003	B-4 Ⓒ	R2098	B-4 Ⓒ	R3058	B-2 Ⓕ	R4013	B-6 Ⓒ		

ADDRESS INFORMATION

Ⓒ... COMPONENT SIDE
Ⓕ... FOIL SIDE

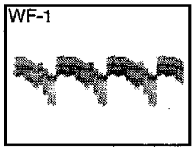
Back Page:
VTR MAIN C.B.A. Section

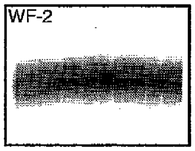
Checking Point of the CSP IC301

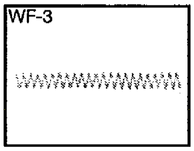
CSP IC301		CHECK POINT		WF No.	REMARKS
PIN	NAME				
1	POR	C326 - (LOWER)	B-3	WF-1	
2	PDOWN	QR310 - (B)	C-5	WF-2	
3	AVDD	C327 - (UPPER)	B-3	—	CAMERA 3V
4	VRT	C327 - (UPPER)	B-3	—	CAMERA 3V
5	VRB	GND	—	—	
6	DAOUT	IC702-10	D-2	WF-3	
7	AVSS	GND	—	—	
8	VZOUT7	IC3001-117	C-2	WF-4	VTR MAIN C.B.A. (C)
9	VZOUT6	IC3001-116	C-2	WF-4	
10	VZOUT5	IC3001-115	C-2	WF-4	
11	VZOUT4	IC3001-114	C-2	WF-4	
12	VZOUT3	IC3001-113	C-2	WF-4	
13	VZOUT2	IC3001-112	C-2	WF-4	
14	VZOUT1	IC3001-111	C-2	WF-4	
15	VZOUT0	IC3001-110	C-2	WF-4	
16	DDFCK	IC304-5	B-2	WF-5	
17	INV	IC3007-6	D-6	WF-6	VTR MAIN C.B.A. (F)
18	VDD	R334 - (UPPER)	A-2	—	REG D 2V
19	VSS	GND	—	—	
20	INH	IC3007-5	B-2	WF-7	VTR MAIN C.B.A. (F)
21	VZCOUT7	IC3001-106	C-2	WF-8	VTR MAIN C.B.A. (C)
22	VZCOUT6	IC3001-105	C-2	WF-8	
23	VZCOUT5	IC3001-104	C-2	WF-8	
24	VZCOUT4	IC3001-103	C-2	WF-8	
25	VZCOUT3	IC3001-102	C-2	WF-8	
26	VZCOUT2	IC3001-101	C-2	WF-8	
27	VZCOUT1	IC3001-100	C-2	WF-8	
28	VZCOUT0	IC3001-99	C-2	WF-8	
29	UVSELOUT	—	—	—	
30	PBHD	IC3001-76	C-2	WF-9	VTR MAIN C.B.A. (C)
31	PBVD	IC3001-77	C-2	WF-9	
32	VTR45M	IC3001-98	C-2	—	
33	PBCIN3	IC3001-81	D-2	WF-10	
34	PBCIN2	IC3001-80	D-2	WF-10	
35	PBCIN1	IC3001-79	D-2	WF-10	
36	PBCIN0	IC3001-78	D-2	WF-10	
37	PBYIN7	IC3001-96	D-2	WF-10	
38	PBYIN6	IC3001-95	D-2	WF-10	
39	PBYIN5	IC3001-94	D-2	WF-10	
40	PBYIN4	IC3001-93	D-2	WF-10	
41	PBYIN3	IC3001-92	D-2	WF-10	
42	PBYIN2	IC3001-91	D-2	WF-10	
43	PBYIN1	IC3001-90	D-2	WF-10	
44	PBYIN0	IC3001-89	D-2	WF-10	
45	MSEL1	GND	—	—	
46	PWM	R318 - (LOWER)	C-4	—	
47	V1V2	QR306 - (3)	D-6	WF-11	
48	BEND	QR305 - (3)	D-6	WF-11	
49	MVD	QR303 - (3)	A-2	WF-11	
50	ADRR8	GND	—	—	
51	ADRR7	GND	—	—	
52	ADRR6	GND	—	—	
53	ADRR5	GND	—	—	
54	VDD	R334 - (UPPER)	A-2	—	REG D 2V
55	VSS	GND	—	—	
56	ADRR4	GND	—	—	
57	ADRR3	IC302-11	C-6	WF-12	
58	ADRR2	IC302-12	C-6	WF-12	
59	ADRR1	IC302-13	C-6	WF-12	
60	ADRR0	IC302-14	C-6	WF-12	
61	DB7	IC302-15	C-6	WF-12	
62	DB6	IC302-18	C-6	WF-12	
63	DB5	IC302-19	C-6	WF-12	
64	DB4	IC302-20	C-6	WF-12	
65	DB3	IC302-21	C-6	WF-12	
66	DB2	IC302-22	C-6	WF-12	
67	DB1	IC302-23	C-6	WF-12	
68	DB0	IC302-24	C-6	WF-12	
69	ASTB	IC302-32	C-6	WF-13	
70	DSTB	IC302-31	C-6	WF-13	
71	RW	IC302-30	C-6	WF-13	
72	VDDH	L319 - (UPPER)	A-3	—	REG D 3V
73	TST3	GND	—	—	
74	TST2	GND	—	—	
75	TST1	QR304 - (C)	A-2	WF-14	
76	VD	IC202-17	B-5	WF-15	
77	HD	IC202-16	B-5	WF-16	
78	FCK	R250 - (LOWER)	A-5	—	
79	VDDH	L319 - (UPPER)	A-3	—	REG D 3V
80	ADIN9	RA304 - (2)	C-5	WF-17	
81	ADIN8	RA304 - (4)	C-5	WF-17	
82	ADIN7	RA304 - (6)	C-5	WF-17	
83	ADIN6	RA304 - (8)	C-5	WF-17	
84	ADIN5	RA306 - (2)	C-5	WF-17	
85	ADIN4	RA306 - (4)	C-5	WF-17	
86	ADIN3	RA306 - (6)	C-5	WF-17	
87	ADIN2	RA306 - (8)	C-5	WF-17	
88	ADIN1	RA307 - (2)	C-4	WF-17	
89	ADIN0	RA307 - (4)	C-4	WF-17	
90	VDD	R334 - (UPPER)	A-2	—	REG D 2V
91	VSS	GND	—	—	
92	TST0	QR304 - (C)	A-2	WF-14	
93	TST4	QR304 - (C)	A-2	WF-14	
94	DSEL	R334 - (UPPER)	A-2	—	REG D 2V
95	VCTRLO	R340 - (RIGHT)	A-3	WF-18	
96	FCK2	R249 - (RIGHT)	A-5	WF-19	

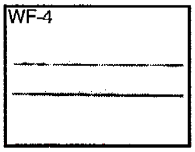
VTR MAIN C.B.A. (F): FOIL SIDE / (C):COMPONENT SIDE

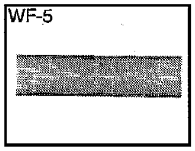
CSP IC301		CHECK POINT		WF No.	REMARKS
PIN	NAME				
97	NHRST	—	—	—	
98	TDO	IC3002-47	C-4	WF-20	VTR MAIN C.B.A. (C)
99	TDI	IC3001-150	B-2	WF-20	
100	TMD	IC3001-147	B-2	WF-20	
101	TCK	IC3001-148	B-2	WF-20	
102	FMPOR	IC304-68	A-2	WF-14	
103	FMOE	CL318	A-3	WF-14	
104	FMRAD	IC304-65	A-2	WF-14	
105	FMRSTR	IC304-63	A-2	WF-21	
106	FMRE	IC304-66	A-2	WF-22	
107	FMRWAE	IC304-64	A-2	WF-23	
108	FMWAD	IC304-7	B-2	WF-14	
109	FMRSTW	IC304-9	B-2	WF-24	
110	FMWE	IC304-6	B-2	WF-25	
111	FMYOUT7	IC304-50	A-1	WF-26	
112	FMYOUT6	IC304-51	A-1	WF-26	
113	FMYOUT5	IC304-52	A-1	WF-26	
114	FMYOUT4	IC304-53	A-1	WF-26	
115	FMYOUT3	IC304-56	A-2	WF-26	
116	FMYOUT2	IC304-57	A-2	WF-26	
117	FMYOUT1	IC304-58	A-2	WF-26	
118	FMYOUT0	IC304-59	A-2	WF-26	
119	FMCOUT3	IC304-44	A-1	WF-26	
120	FMCOUT2	IC304-45	A-1	WF-26	
121	FMCOUT1	IC304-46	A-1	WF-26	
122	FMCOUT0	IC304-47	A-1	WF-26	
123	VZPLSTST	—	—	—	
124	HZPLSTST	—	—	—	
125	FMYIN7	IC304-20	B-1	WF-27	
126	VDD	R334 - (UPPER)	A-2	—	REG D 2V
127	VSS	GND	—	—	
128	FMYIN6	IC304-19	B-1	WF-27	
129	FMYIN5	IC304-18	B-2	WF-27	
130	FMYIN4	IC304-17	B-2	WF-27	
131	FMYIN3	IC304-16	B-2	WF-27	
132	FMYIN2	IC304-15	B-2	WF-27	
133	FMYIN1	IC304-14	B-2	WF-27	
134	FMYIN0	IC304-13	B-2	WF-27	
135	FMCIN3	IC304-27	B-1	WF-28	
136	FMCIN2	IC304-26	B-1	WF-28	
137	FMCIN1	IC304-25	B-1	WF-28	
138	FMCIN0	IC304-24	B-1	WF-28	
139	ACOMP	IC702-33	C-6	WF-26	
140	BCOMP	IC702-32	C-6	WF-26	
141	SIG	IC702-34	C-6	WF-29	
142	FCA	IC702-43	C-7	WF-29	
143	FCB	IC702-42	C-7	WF-29	
144	FC2	IC702-41	C-7	WF-29	

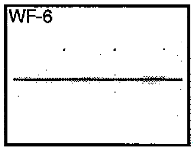

WF-1

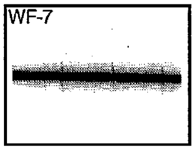

WF-2

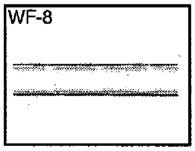

WF-3

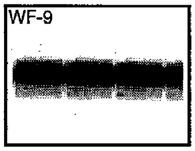

WF-4

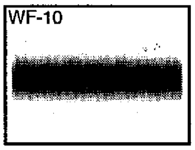

WF-5

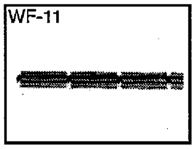

WF-6

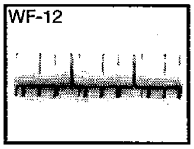

WF-7

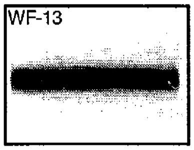

WF-8

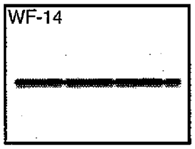

WF-9

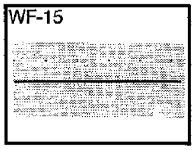

WF-10

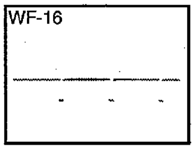

WF-11

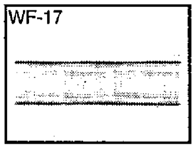

WF-12

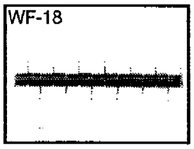

WF-13

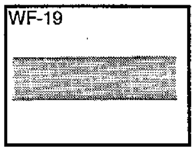

WF-14

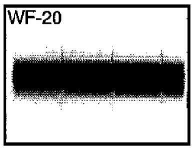

WF-15

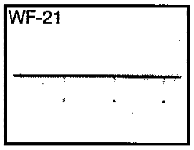

WF-16

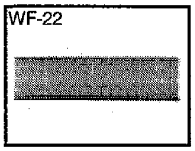

WF-17

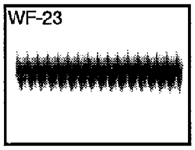

WF-18

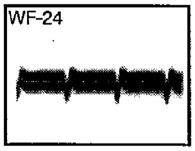

WF-19

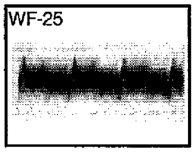

WF-20

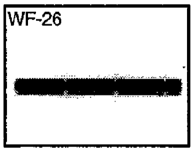

WF-21

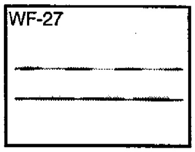

WF-22

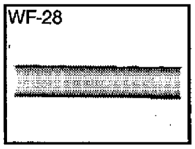

WF-23

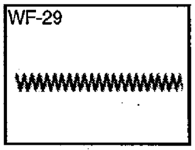

WF-24


WF-25

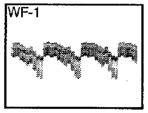

WF-26

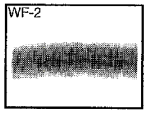

WF-27

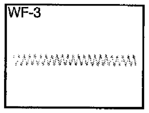

WF-28

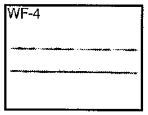

WF-29

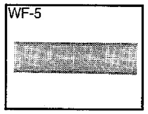
CSP IC301		CHECK POINT		WF No.	REMARKS
PIN	NAME				
97	NHRST	—	—	—	
98	TDO	IC3002-47	C-4	WF-20	VTR MAIN C.B.A. (C)
99	TDI	IC3001-150	B-2	WF-20	
100	TMD	IC3001-147	B-2	WF-20	
101	TCK	IC3001-148	B-2	WF-20	
102	FMPOR	IC304-68	A-2	WF-14	
103	FMOE	CL318	A-3	WF-14	
104	FMRAD	IC304-65	A-2	WF-14	
105	FMRSTR	IC304-63	A-2	WF-21	
106	FMRE	IC304-66	A-2	WF-22	
107	FMRWAE	IC304-64	A-2	WF-23	
108	FMWAD	IC304-7	B-2	WF-14	
109	FMRSTW	IC304-9	B-2	WF-24	
110	FMWE	IC304-6	B-2	WF-25	
111	FMYOUT7	IC304-50	A-1	WF-26	
112	FMYOUT6	IC304-51	A-1	WF-26	
113	FMYOUT5	IC304-52	A-1	WF-26	
114	FMYOUT4	IC304-53	A-1	WF-26	
115	FMYOUT3	IC304-56	A-2	WF-26	
116	FMYOUT2	IC304-57	A-2	WF-26	
117	FMYOUT1	IC304-58	A-2	WF-26	
118	FMYOUT0	IC304-59	A-2	WF-26	
119	FMCOUT3	IC304-44	A-1	WF-26	
120	FMCOUT2	IC304-45	A-1	WF-26	
121	FMCOUT1	IC304-46	A-1	WF-26	
122	FMCOUT0	IC304-47	A-1	WF-26	
123	VZPLSTST	—	—	—	
124	HZPLSTST	—	—	—	
125	FMYIN7	IC304-20	B-1	WF-27	
126	VDD	R334 - (UPPER)	A-2	—	REG D 2V
127	VSS	GND	—	—	
128	FMYIN6	IC304-19	B-1	WF-27	
129	FMYIN5	IC304-18	B-2	WF-27	
130	FMYIN4	IC304-17	B-2	WF-27	
131	FMYIN3	IC304-16	B-2	WF-27	
132	FMYIN2	IC304-15	B-2	WF-27	
133	FMYIN1	IC304-14	B-2	WF-27	
134	FMYIN0	IC304-13	B-2	WF-27	
135	FMCIN3	IC304-27	B-1	WF-28	
136	FMCIN2	IC304-26	B-1	WF-28	
137	FMCIN1	IC304-25	B-1	WF-28	
138	FMCIN0	IC304-24	B-1	WF-28	
139	ACOMP	IC702-33	C-6	WF-26	
140	BCOMP	IC702-32	C-6	WF-26	
141	SIG	IC702-34	C-6	WF-29	
142	FCA	IC702-43	C-7	WF-29	
143	FCB	IC702-42	C-7	WF-29	
144	FC2	IC702-41	C-7	WF-29	

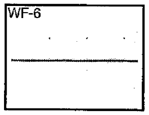

WF-1

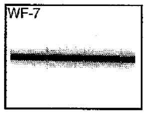

WF-2

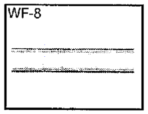

WF-3

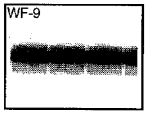

WF-4

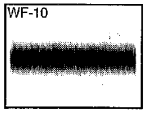

WF-5

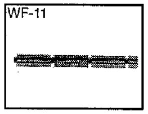

WF-6

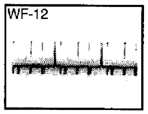

WF-7

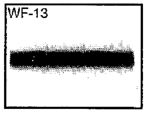

WF-8

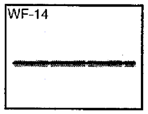

WF-9

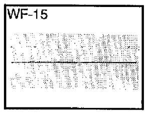

WF-10

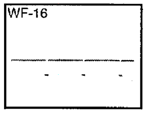

WF-11

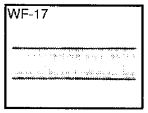

WF-12

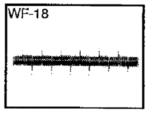

WF-13

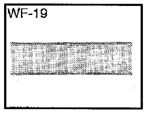

WF-14

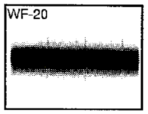

WF-15

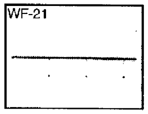

WF-16

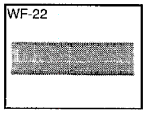

WF-17

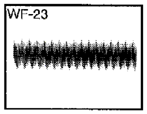

WF-18

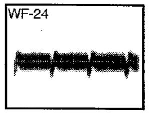

WF-19

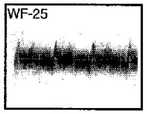

WF-20

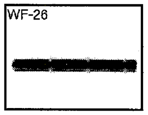

WF-21

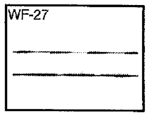

WF-22

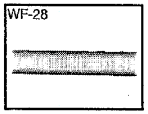

WF-23

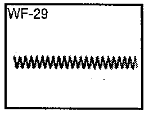

WF-24


WF-25

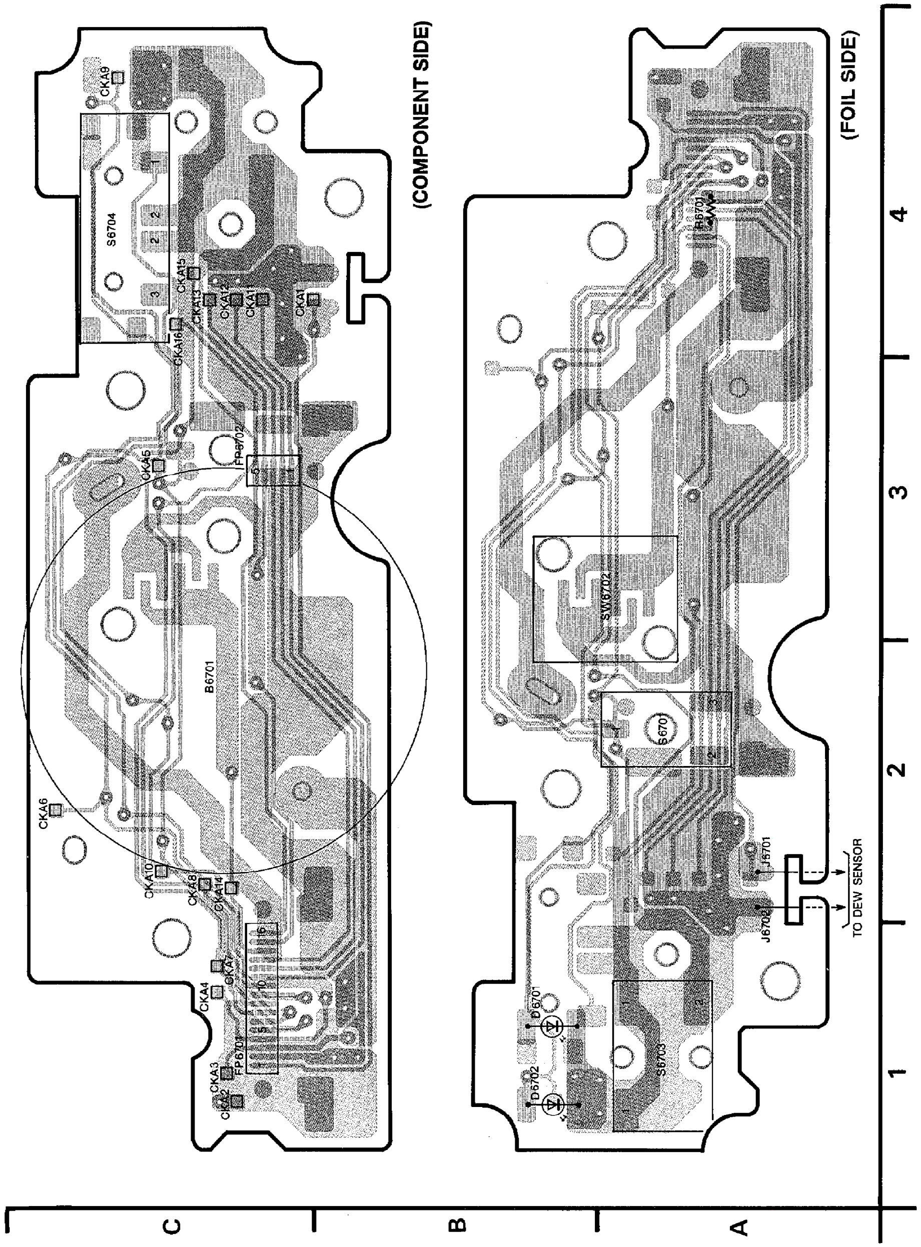

WF-26


WF-27

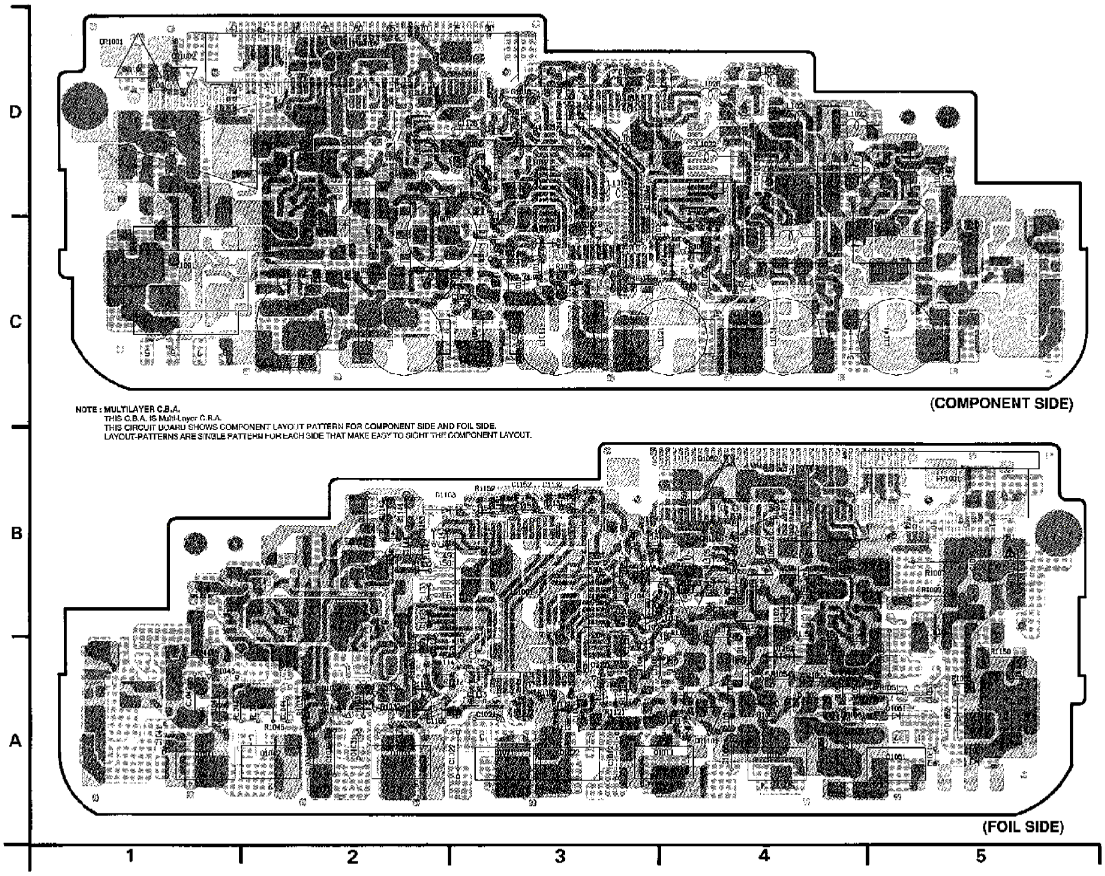

WF-28


WF-29

3-35. REAR OPERATION C.B.A. (VEP06C16A)


(COMPONENT SIDE)
CKA9
S6704
CKA15
CKA16
CKA13
CKA12
CKA11
CKA1
CKA5
FP6702
B6701
CKA6
CKA10
CKA8
CKA14
CKA4
CKA7
FP6701
CKA3
CKA2
(FOIL SIDE)
B6701
SW6702
S6701
J6701
J6702
TO DEW SENSOR
D6701
D6702
S6703
4
3
2
1
C
B
A

3-36. POWER C.B.A. (VEP01801A)



NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

Back Page:
REAR OPERATION C.B.A. Section

POWER C.B.A.

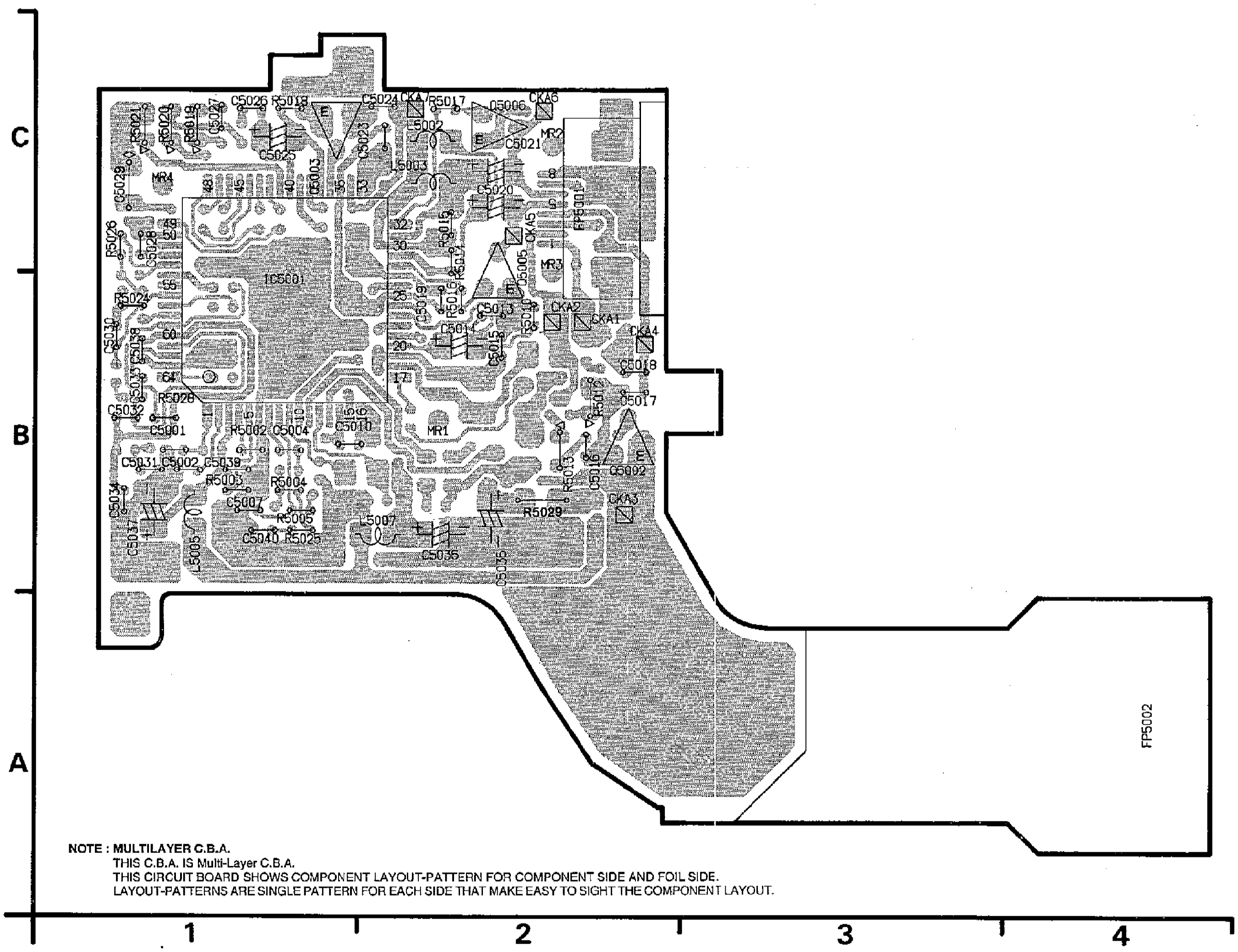
Integrated Circuit	
IC1001	B-3
IC1002	B-4
Transistor	
Q1011	A-4
Q1021	A-3
Q1022	A-3
Q1031	A-2
Q1041	A-1
Q1042	A-2
Q1051	D-1
Q1052	B-4
Q1053	B-4
Q1054	B-3
Q1055	B-4
Q1056	B-4
Q1061	A-5
Q1062	A-4
Q1101	A-4
Transistor & Resistor	
QR1001	D-1
QR1002	D-1
QR1003	B-4
QR1004	D-3
QR1055	B-4
QR1101	A-4
Diode	
D1051	A-5
D1052	A-5
D1061	A-5
D1062	A-4
D1101	A-4
D1102	B-4
D1103	B-2
D1151	A-4
D1152	A-4
Connector	
FP1001	B-5
PP1001	D-2
IP	
IP1001	B-5
Tranformer	
T1001	C-1
Coil	
L1001	C-2
L1011	C-3
L1012	D-3
L1013	D-3
L1014	D-3
L1015	D-3
L1016	C-3
L1017	C-3
L1021	C-3
L1022	D-4
L1023	D-4
L1024	D-4
L1025	D-4
L1026	D-4
L1029	D-2
L1031	C-4
L1032	C-4
L1041	C-4
L1042	C-5
L1043	D-5
L1051	A-5
L1052	B-4
L1054	B-4
L1061	C-2
L1062	C-2
Capacitor	
C1001	C-2
C1002	D-2
C1003	D-2
C1004	D-2
C1009	B-5
C1011	A-4
C1012	A-3
C1013	C-3
C1014	C-3
C1015	D-3
C1016	D-3
C1017	D-3
C1018	D-3
C1019	D-3
C1021	A-3
C1022	A-3
C1023	C-4
C1024	D-3
C1025	D-4
C1026	D-3
C1027	D-4
C1028	D-4
C1029	B-2
C1031	A-2
C1032	A-2
C1033	A-2
C1034	A-2
C1035	D-4
C1036	D-4
C1041	A-1
C1042	A-1
C1044	A-2
C1045	D-5
C1046	D-5
C1047	D-4
C1051	A-5
C1052	A-5
C1053	A-5
C1055	A-5
C1056	A-5
C1058	B-4
C1059	B-4
C1061	A-5
C1062	C-3
C1063	A-4
C1064	C-3
C1065	A-4
C1066	A-4
C1101	A-3
C1102	A-3
C1103	B-3
C1104	A-3
C1105	A-4
C1106	A-3
C1107	B-4
C1111	A-3
C1112	A-3
C1113	A-3
C1114	A-2
C1117	D-3
C1118	D-2
C1119	C-3
C1121	A-3
C1122	A-3
C1123	B-2
C1124	A-2
C1128	D-3
C1129	D-4
C1131	B-3
C1132	B-3
C1133	B-2
C1134	B-2
C1141	B-2
C1142	B-2
C1143	B-2
C1144	B-2
C1151	B-3
C1152	B-3
C1153	B-2
C1154	B-3
C1155	A-2
C1156	B-4
C1251	B-4
Resistor	
R1001	D-1
R1003	B-4
R1004	B-4
R1005	C-3
R1007	B-5
R1008	B-4
R1009	B-5
R1010	C-3
R1011	C-3
R1012	C-3
R1013	C-3
R1014	C-3
R1015	C-3
R1020	C-4
R1021	C-4
R1022	C-4
R1023	C-4
R1024	C-4
R1025	C-3
R1030	A-2
R1031	A-2
R1032	A-2
R1033	A-2
R1034	A-2
R1035	A-2
R1040	A-1
R1041	A-1
R1042	A-2
R1043	A-1
R1044	A-1
R1045	A-2
R1050	A-4
R1051	A-5
R1052	A-4
R1053	A-4
R1054	A-4
R1056	A-5
R1057	B-3
R1058	B-3
R1059	B-3
R1061	A-4
R1062	A-4
R1081	B-2
R1101	A-4
R1102	B-4
R1103	B-3
R1104	B-3
R1105	B-4
R1106	B-4
R1107	B-3
R1108	A-4
R1109	B-4
R1111	A-3
R1112	A-2
R1121	A-3
R1122	A-2
R1131	B-3
R1132	B-2
R1136	B-4
R1141	B-2
R1142	B-2
R1150	A-5
R1151	B-3
R1152	B-3
R1153	A-2
R1154	A-2
R1155	A-4
R1156	B-3
R1157	B-3
R1158	A-4
R1159	B-4
R1178	A-3
R1179	A-3

ADDRESS INFORMATION

3-37. HEAD AMP C.B.A. (VEP05352A)

HEAD/REC AMP C.B.A.	
Integrated Circuit	
IC5001	B-1
Transistor	
Q5002	B-2
Q5003	C-1
Q5005	B-2
Q5006	C-2
Connector	
FP5001	C-2
Coil	
L5002	C-2
L5003	C-2
L5005	B-1
L5007	B-2
Capacitor	
C5001	B-1
C5002	B-1
C5004	B-1
C5007	B-1
C5010	B-1
C5013	B-2
C5014	B-2
C5015	B-2
C5016	B-2
C5017	B-2
C5018	B-2
C5019	B-2
C5020	C-2
C5021	C-2
C5023	C-2
C5024	C-2
C5025	C-1
C5026	C-1
C5027	C-1
C5028	C-1
C5029	C-1
C5030	B-1
C5031	B-1
C5032	B-1
C5033	B-1
C5034	B-1
C5035	B-2
C5036	B-2
C5037	B-1
C5038	B-1
C5039	B-1
C5040	B-1
Resistor	
R5002	B-1
R5003	B-1
R5004	B-1
R5005	B-1
R5010	B-2
R5012	B-2
R5013	B-2
R5014	C-2
R5015	C-2
R5016	B-2
R5017	C-2
R5018	C-1
R5019	C-1
R5020	C-1
R5021	C-1
R5024	B-1
R5025	B-1
R5026	C-1
R5028	B-1
R5029	B-2

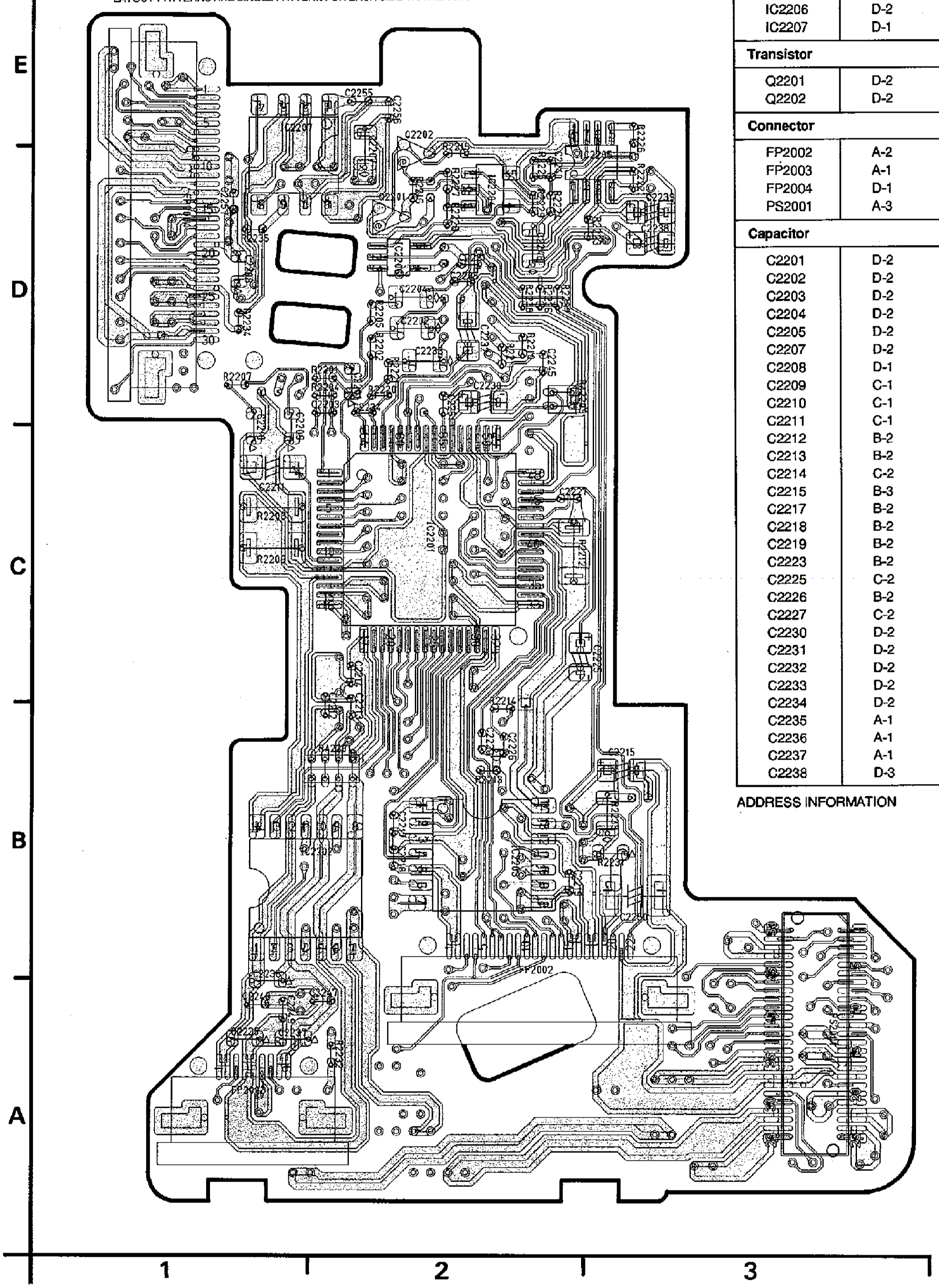
ADDRESS INFORMATION


C
B
A
1
2
3
4
IC5001
FP5001
FP5002
MR1
MR2
MR3
MR4
CKA1
CKA2
CKA3
CKA4
CKA5
CKA6
CKA7
Q5002
Q5003
Q5005
Q5006
L5002
L5003
L5005
L5007
C5001
C5002
C5003
C5004
C5007
C5010
C5013
C5014
C5015
C5016
C5017
C5018
C5019
C5020
C5021
C5023
C5024
C5025
C5026
C5027
C5028
C5029
C5030
C5031
C5032
C5033
C5034
C5035
C5036
C5037
C5038
C5039
C5040
R5002
R5003
R5004
R5005
R5010
R5012
R5013
R5015
R5016
R5017
R5018
R5019
R5020
R5021
R5024
R5025
R5026
R5028
R5029
E
B

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

3-38. DRIVE C.B.A. (VEP02561A)

NOTE : **MULTILAYER C.B.A.**
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

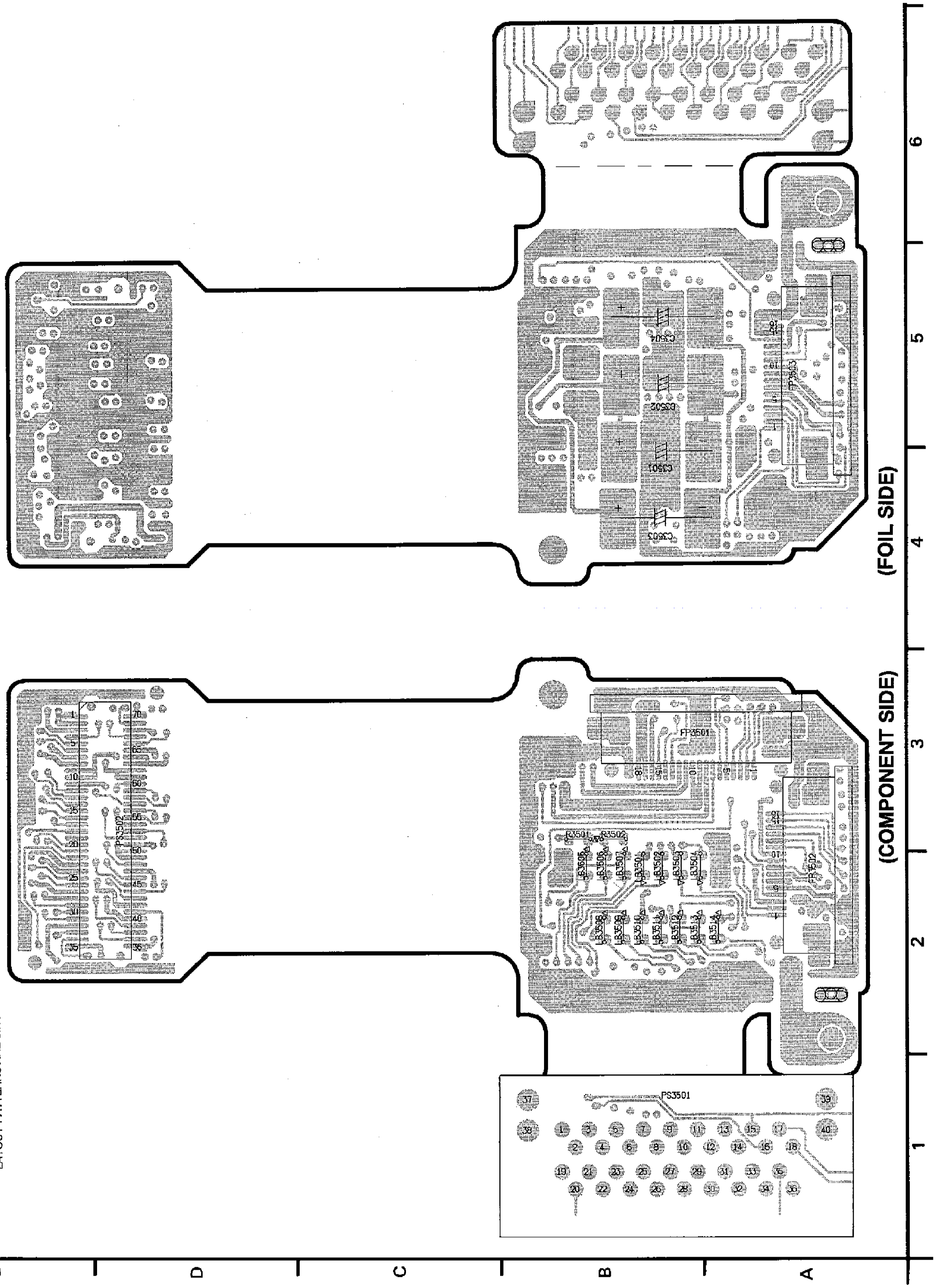

E
D
C
B
A
1
2
3
C2255
C2256
Q2202
C2207
R2215
Q2201
R2226
C2235
C2238
R2207
C2211
R2208
R2209
IC2201
C2227
R2212
C2215
R2214
RA2201
FP2002
FP2003
PS2001
C2236
C2237
R2231
R2232
C2247
C2248
C2249

DRIVE C.B.A.	
Integrated Circuit	
IC2201	C-2
IC2202	B-1
IC2203	B-2
IC2204	D-2
IC2205	D-2
IC2206	D-2
IC2207	D-1
Transistor	
Q2201	D-2
Q2202	D-2
Connector	
FP2002	A-2
FP2003	A-1
FP2004	D-1
PS2001	A-3
Capacitor	
C2201	D-2
C2202	D-2
C2203	D-2
C2204	D-2
C2205	D-2
C2207	D-2
C2208	D-1
C2209	C-1
C2210	C-1
C2211	C-1
C2212	B-2
C2213	B-2
C2214	C-2
C2215	B-3
C2217	B-2
C2218	B-2
C2219	B-2
C2223	B-2
C2225	C-2
C2226	B-2
C2227	C-2
C2230	D-2
C2231	D-2
C2232	D-2
C2233	D-2
C2234	D-2
C2235	A-1
C2236	A-1
C2237	A-1
C2238	D-3
C2239	D-3
C2240	D-2
C2245	D-2
C2246	D-2
C2247	A-2
C2248	A-1
C2249	A-1
C2250	B-3
C2251	D-2
C2255	E-2
C2256	E-2
C2257	D-1
Resistor	
R2201	D-2
R2202	D-2
R2204	D-2
R2205	D-2
R2207	D-1
R2208	C-1
R2209	C-1
R2210	D-2
R2211	D-2
R2212	C-2
R2213	B-2
R2214	B-2
R2215	D-2
R2216	D-2
R2220	D-2
R2221	D-2
R2222	D-3
R2223	D-2
R2224	D-2
R2225	D-2
R2226	E-3
R2227	D-2
R2228	D-2
R2229	D-2
R2231	B-3
R2232	A-2
R2233	B-3
R2234	D-1
R2235	D-1
R2236	D-2
R2237	D-2
R2238	D-2
Resistor Array	
RA2201	B-2
RA2203	D-2

ADDRESS INFORMATION

3-39. LCD I/F C.B.A. (VEP00Y65A)

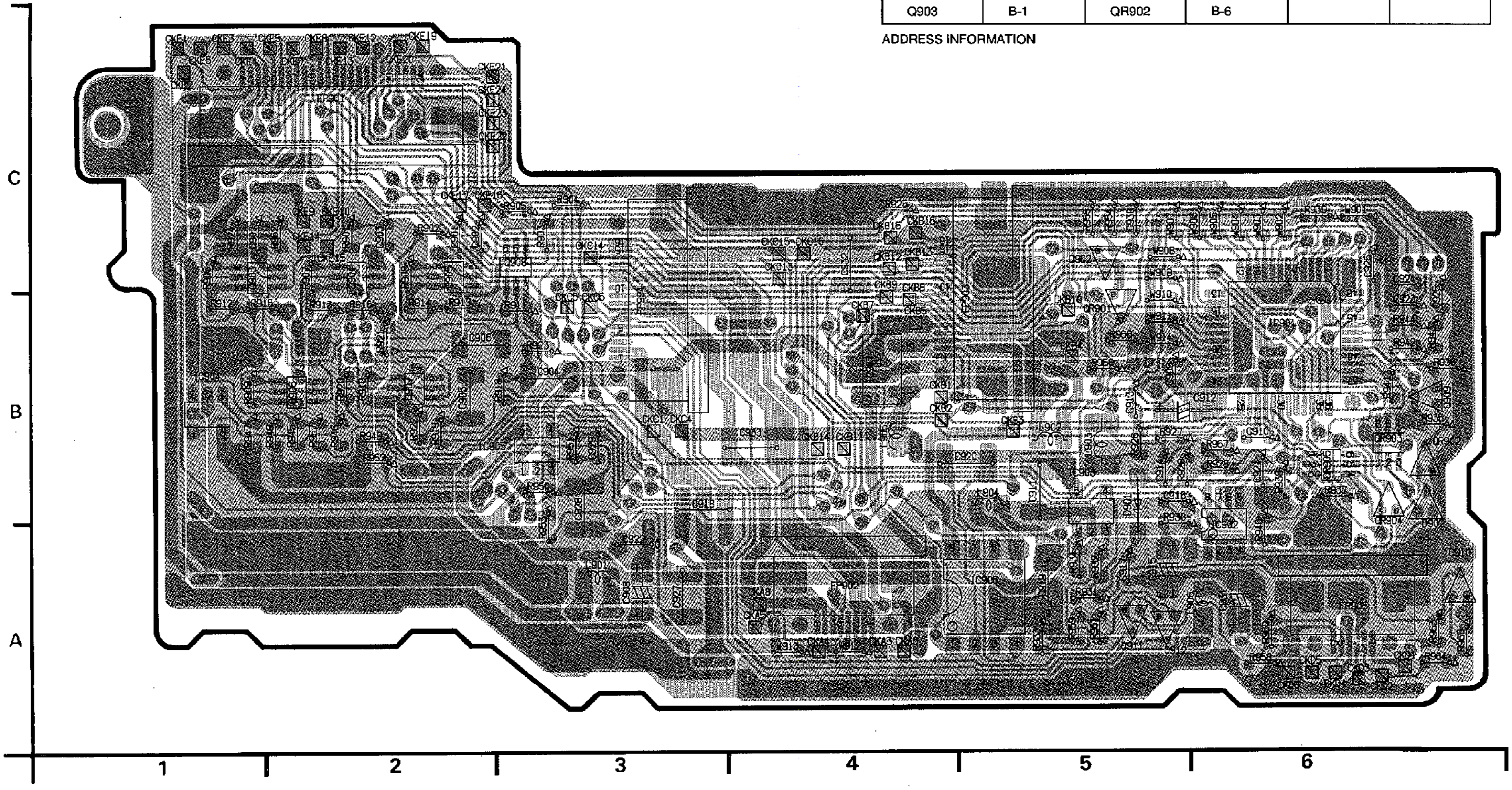
NOTE : **MULTILAYER C.B.A.**
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.


(FOIL SIDE)
(COMPONENT SIDE)
C3501
C3502
C3503
C3504
FP3503
FP3501
FP3502
PS3502
PS3501
R3501
R3502
LB3505
LB3506
LB3507
LB3501
LB3502
LB3503
LB3504
LB3508
LB3509
LB3510
LB3511
LB3512
LB3513
LB3514
1
5
10
15
20
25
30
35
36
40
45
50
55
60
65
70
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
A
B
C
D
E
1
2
3
4
5
6

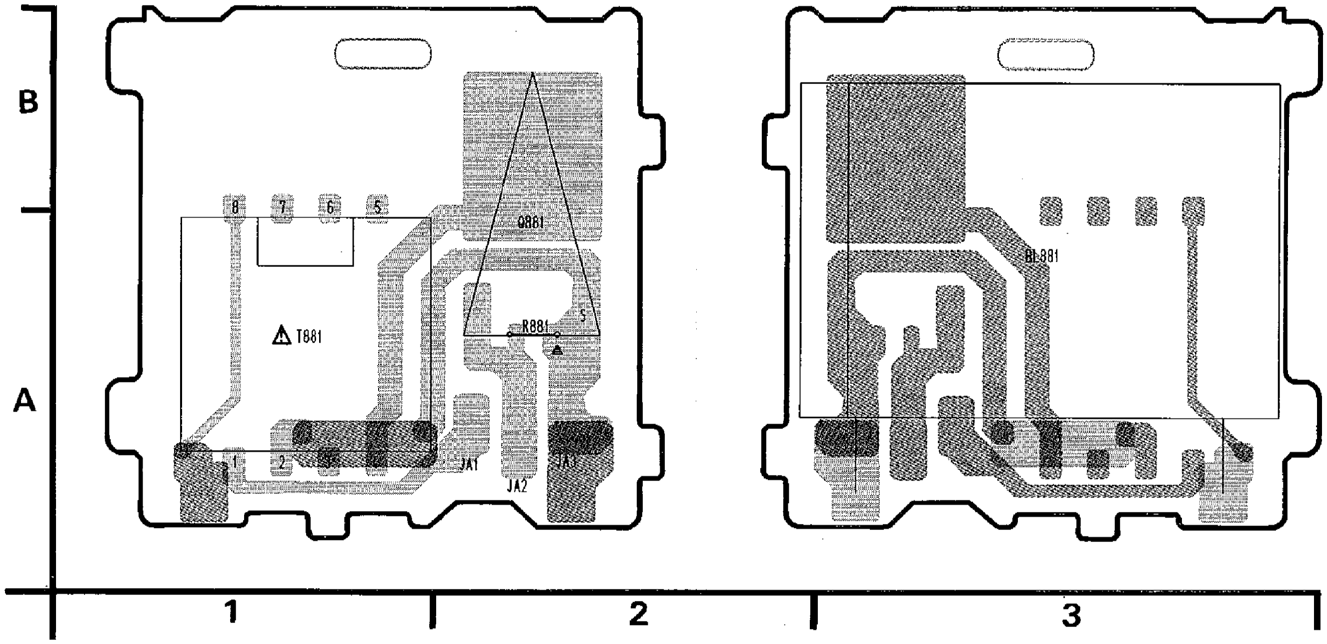
3-40. MONITOR C.B.A. (VEP26196B) FOR NV-DS5

MONITOR C.B.A.					
Integrated Circuit		Q904	C-2	QR903	B-6
IC901	B-6	Q905	C-2	QR904	B-6
IC902	A-6	Q906	B-2	QR905	B-6
IC903	B-5	Q907	B-2	**Connector**	
IC904	B-1	Q908	C-3	FP901	C-2
IC905	B-3	Q909	B-6	FP902	A-4
IC906	A-5	Q910	A-6	FP903	B-5
IC907	B-4	Q911	A-5	FP904	B-3
		Q912	A-5	FP905	A-6
Transistor		**Transistor & Resistor**			
Q902	C-5	QR901	B-5		
Q903	B-1	QR902	B-6		

ADDRESS INFORMATION

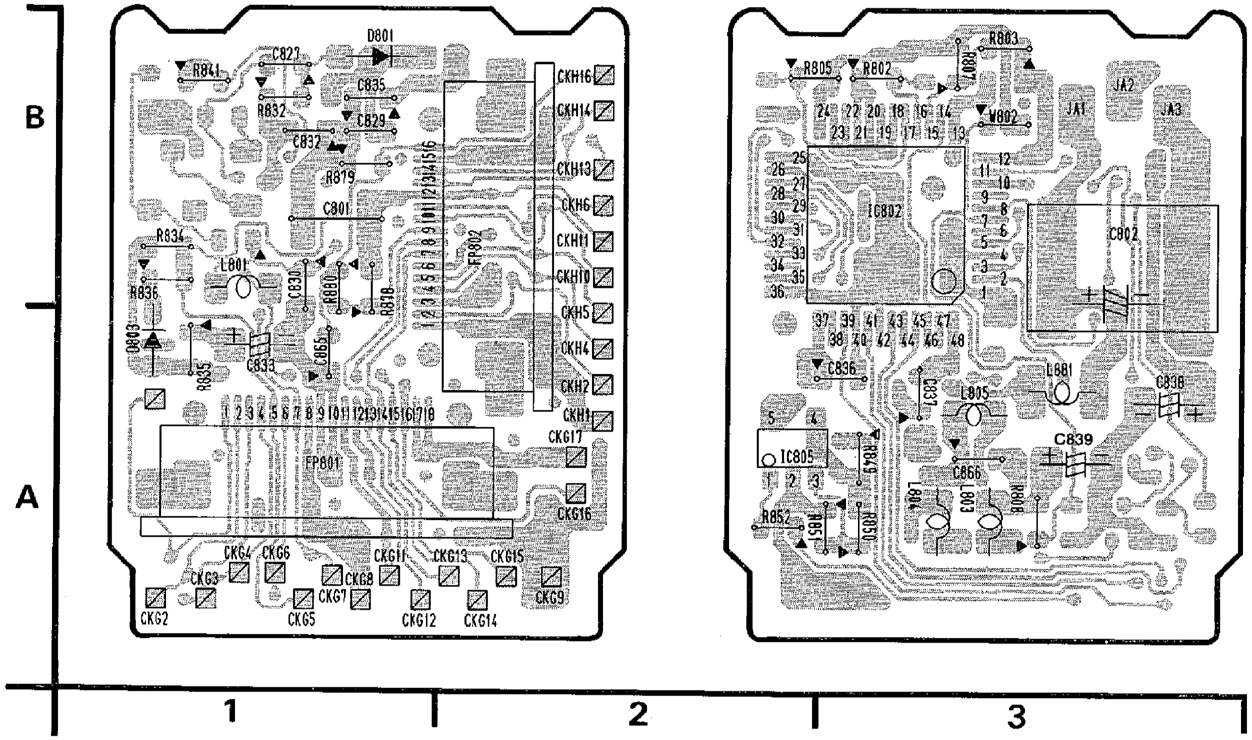


3-41. EVF (A) C.B.A. (VEP28240C)

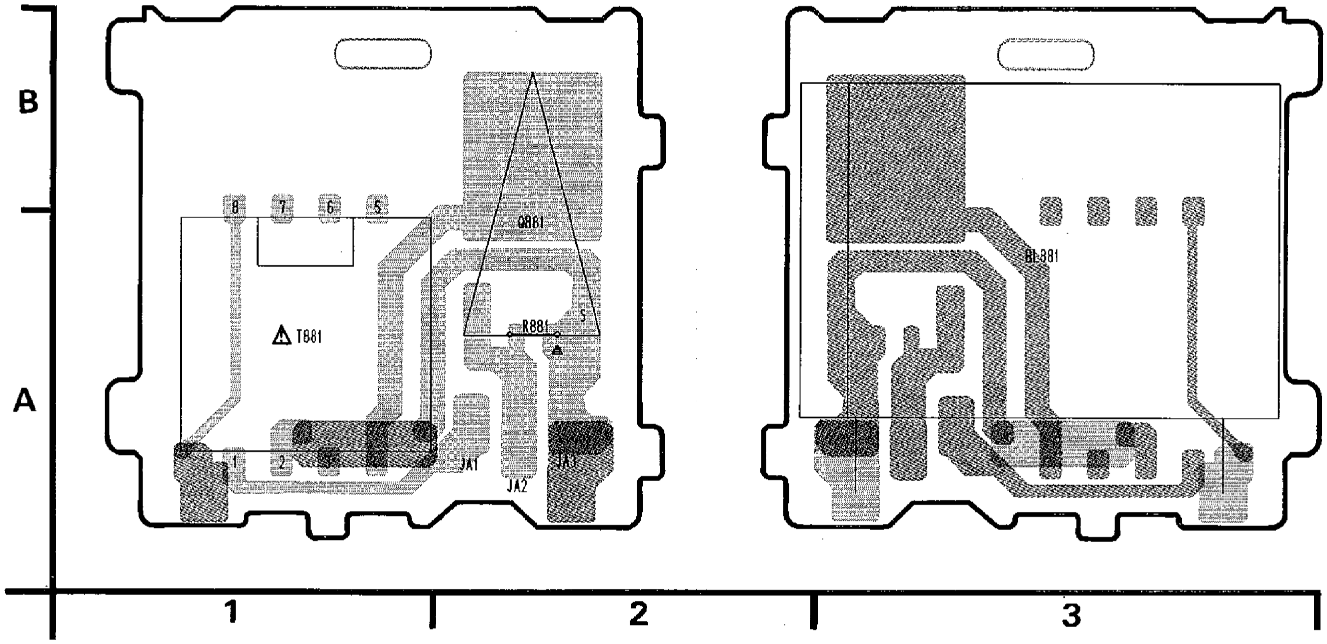

B
A
8
7
6
5
Q881
T881
R881
1
2
JA1
JA2
BL881
1
2
3

3-42. EVF (B) C.B.A. (VEP28244A)

NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.

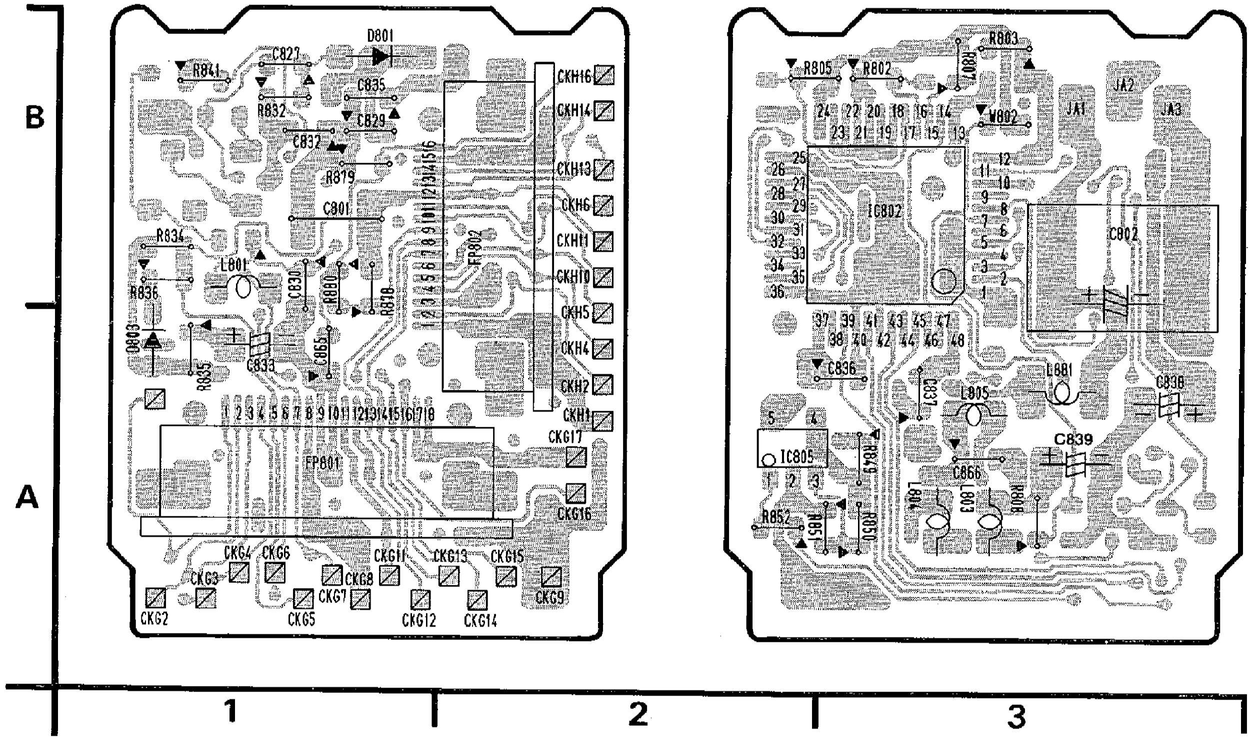

B
A
D801
R841
C827
C835
R832
C829
C832
R879
C801
R834
L801
R836
C830
R880
R878
FP802
D803
C833
C865
R835
FP801
CKH16
CKH14
CKH13
CKH6
CKH11
CKH10
CKH5
CKH4
CKH2
CKH1
CKG17
CKG16
CKG4
CKG6
CKG11
CKG13
CKG15
CKG3
CKG8
CKG7
CKG9
CKG2
CKG5
CKG12
CKG14
R803
R805
R802
R807
W802
JA1
JA2
JA3
IC802
C802
C836
C837
L805
L881
C838
C839
IC805
R849
C866
L804
L803
R808
R852
R851
R850
1
2
3

3-41. EVF (A) C.B.A. (VEP28240C)


B
A
8
7
6
5
Q881
T881
R881
1
2
JA1
JA2
JA1
BL881
1
2
3

3-42. EVF (B) C.B.A. (VEP28244A)

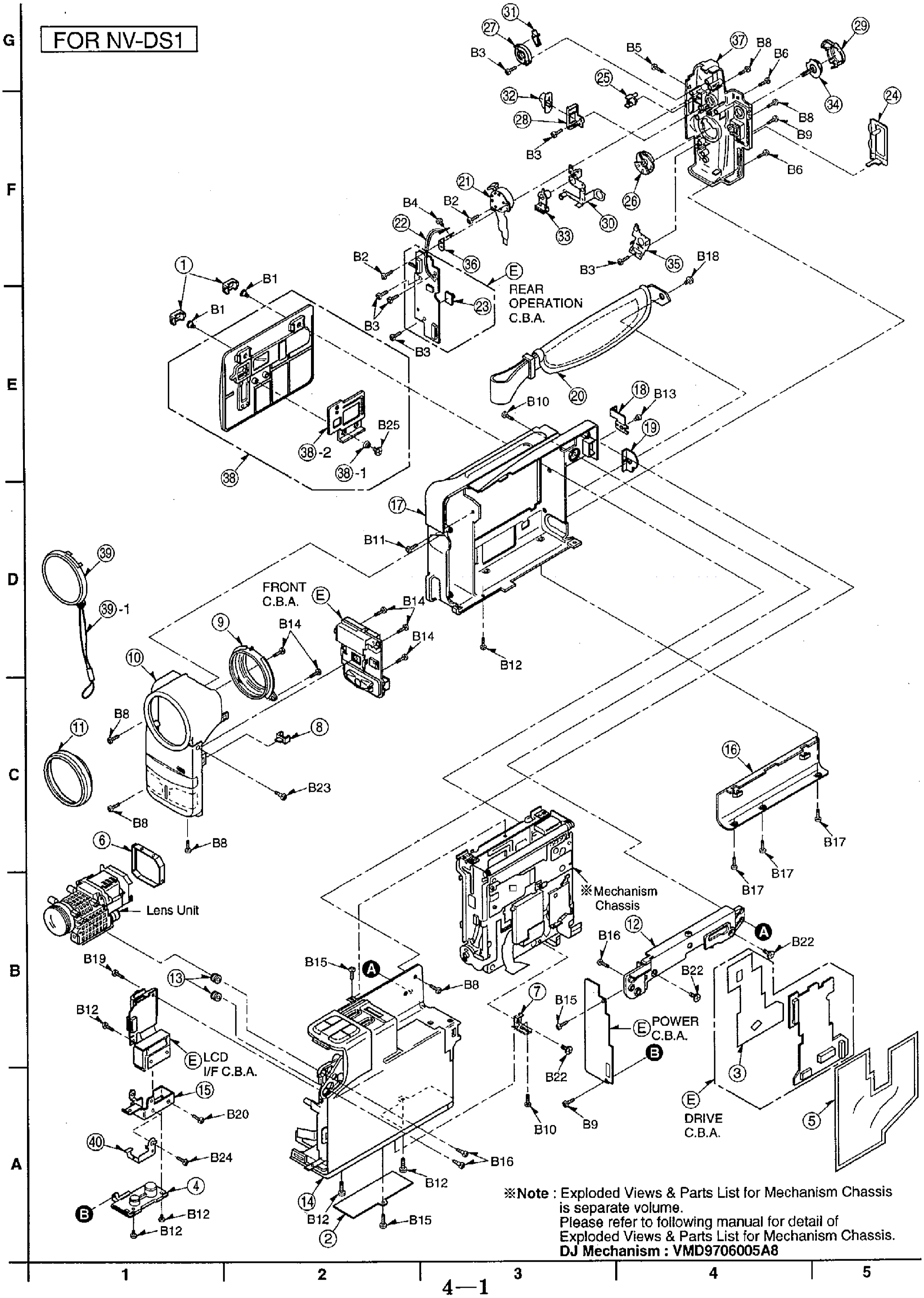
NOTE : MULTILAYER C.B.A.
THIS C.B.A. IS Multi-Layer C.B.A.
THIS CIRCUIT BOARD SHOWS COMPONENT LAYOUT-PATTERN FOR COMPONENT SIDE AND FOIL SIDE.
LAYOUT-PATTERNS ARE SINGLE PATTERN FOR EACH SIDE THAT MAKE EASY TO SIGHT THE COMPONENT LAYOUT.


B
A
D801
R841
C827
C835
R832
C829
C832
R879
C801
R834
L801
R836
C830
R880
R878
FP802
D803
C833
C865
R835
FP801
CKH16
CKH14
CKH13
CKH6
CKH11
CKH10
CKH5
CKH4
CKH2
CKH1
CKG17
CKG16
CKG2
CKG3
CKG4
CKG5
CKG6
CKG7
CKG8
CKG9
CKG11
CKG12
CKG13
CKG14
CKG15
R803
R807
R805
R802
W802
JA1
JA2
JA3
IC802
C802
C836
C837
L805
L881
C838
C839
IC805
R849
C866
L804
L803
R808
R852
R851
R850
1
2
3

SECTION 4 EXPLODED VIEWS & PARTS LIST

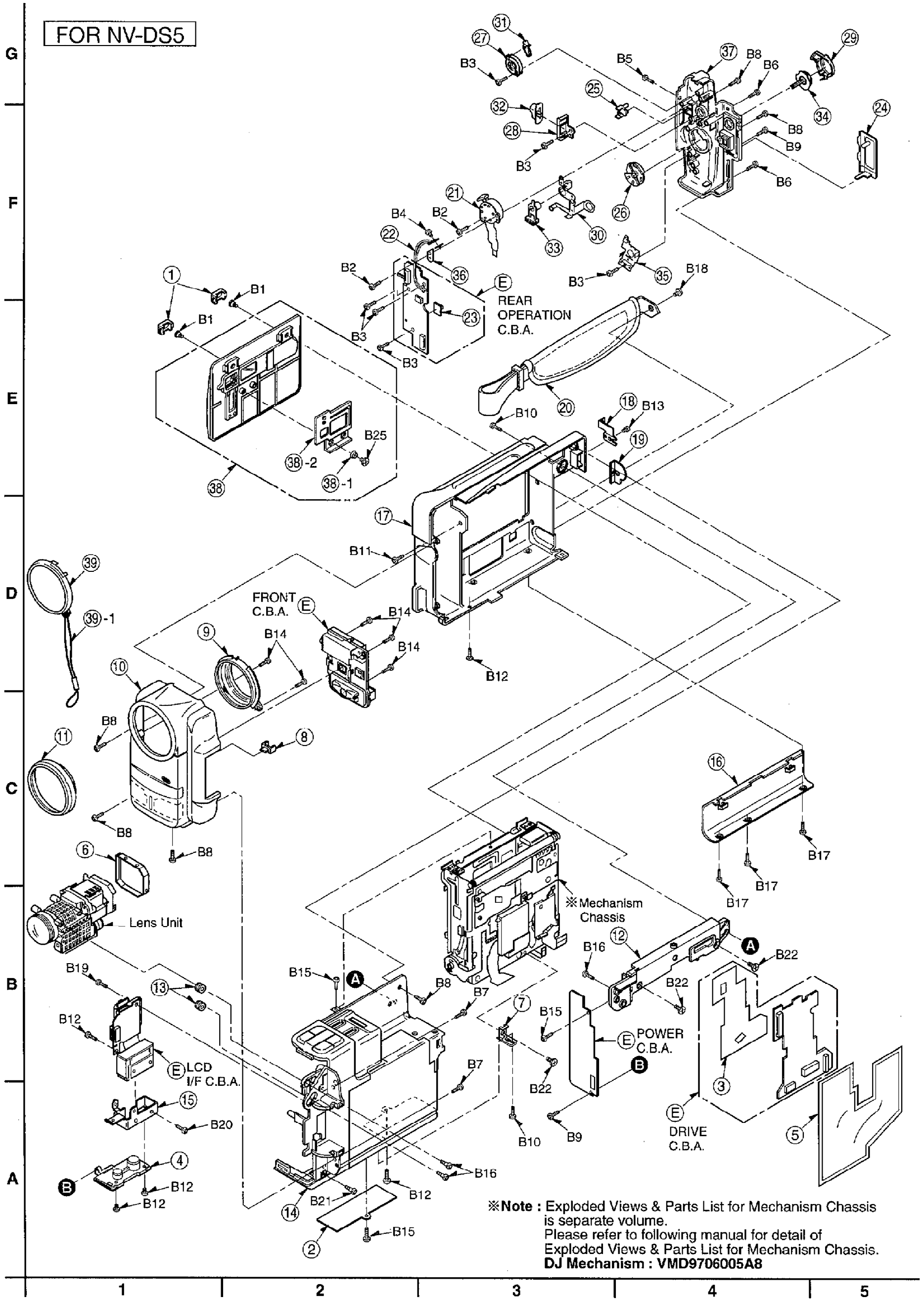
4-1. EXPLODED VIEWS & MECHANICAL REPLACEMENT PARTS LIST

❶ FRAME & CASING PARTS SECTION (1) FOR NV-DS1


FOR NV-DS1
G
F
E
D
C
B
A
1
2
3
4
5
㉛
㉗
B3
B5
㊲
B8
B6
㉙
㉕
㉜
㉞
㉔
㉘
B8
B9
B3
B6
㉑
㉖
B4
B2
㉒
㉝
㉚
㊱
B2
①
B1
B1
B18
B3
㉟
Ⓔ REAR OPERATION C.B.A.
㉓
B3
B3
⑳
⑱
B13
B10
⑲
B25
㊳-2
㊳-1
㊳
⑰
B11
㊴
㊴-1
FRONT C.B.A.
Ⓔ
B14
⑨
B14
B14
⑩
B12
B8
⑪
⑧
B23
⑯
B8
B8
⑥
B17
B17
B17
※Mechanism Chassis
Lens Unit
⑫
B16
Ⓐ
B22
B19
B15
Ⓐ
⑬
B8
B22
B12
⑦
B15
Ⓔ POWER C.B.A.
Ⓔ LCD I/F C.B.A.
Ⓑ
③
⑮
B22
B20
Ⓔ DRIVE C.B.A.
⑤
B10
B9
㊵
B24
B16
④
B12
⑭
Ⓑ
B12
B12
B12
B15
②

※Note : Exploded Views & Parts List for Mechanism Chassis is separate volume.
Please refer to following manual for detail of Exploded Views & Parts List for Mechanism Chassis.
DJ Mechanism : VMD9706005A8

❶ FRAME & CASING PARTS SECTION (1) FOR NV-DS5



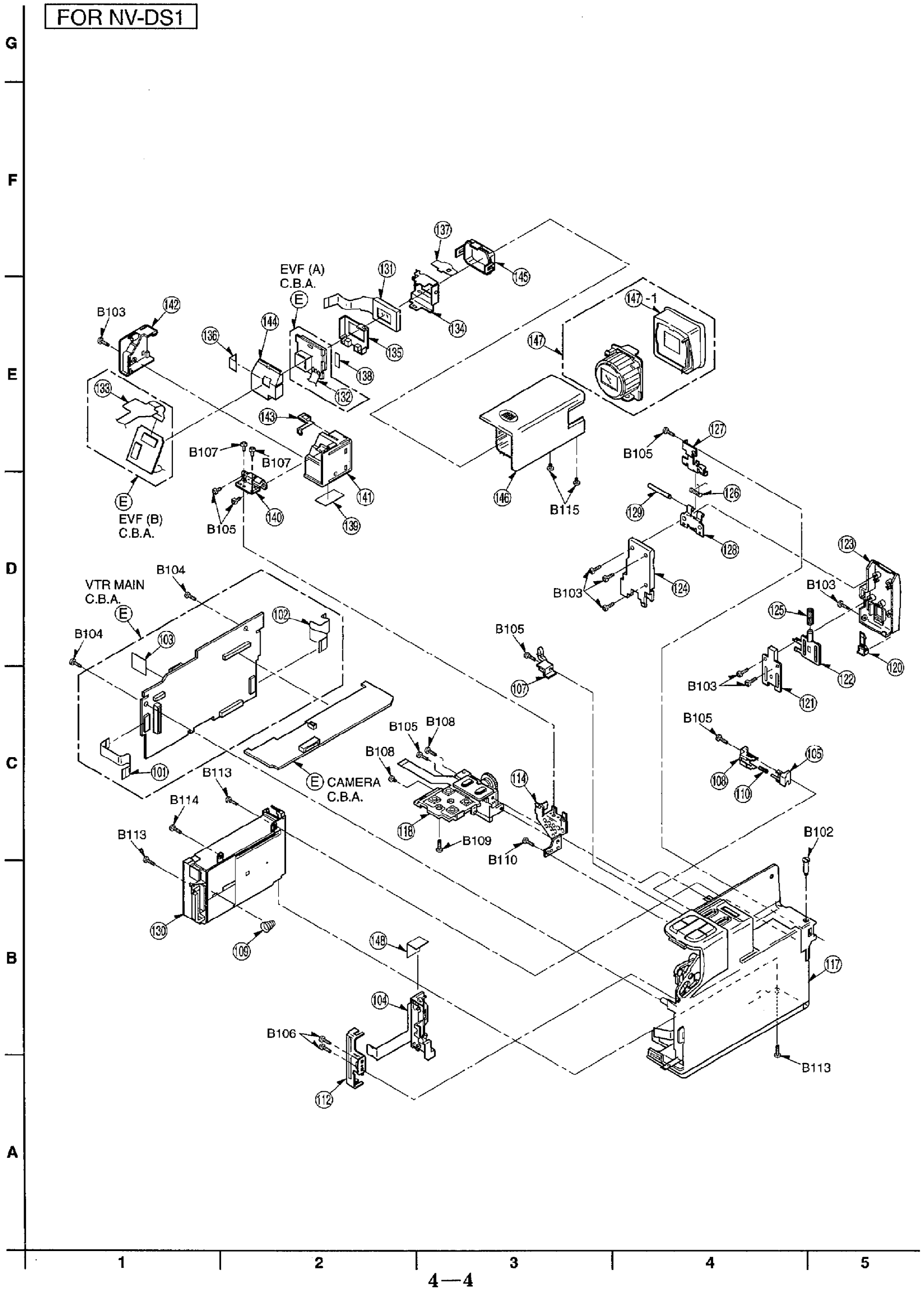
※**Note :** Exploded Views & Parts List for Mechanism Chassis is separate volume.
Please refer to following manual for detail of Exploded Views & Parts List for Mechanism Chassis.
DJ Mechanism : VMD9706005A8

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

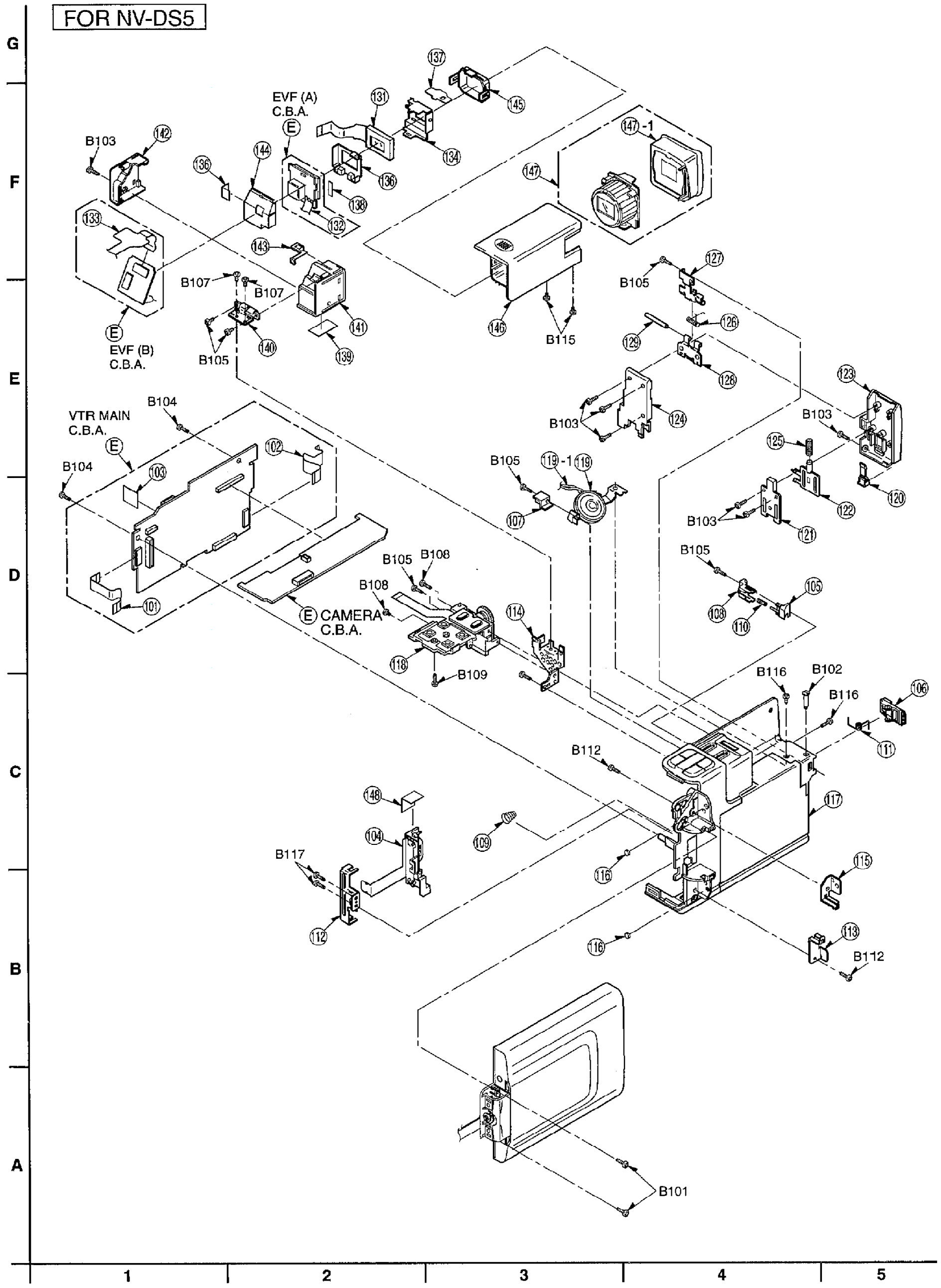
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1 (1)	VGP4575	SCREW CAP	2	
2 (1)	VKF2732	EVR COVER	1	
3 (1)	VMZ2689	BARRIER	1	
4 (1)	VMD2796	TRIPOD FRAME	1	
5 (1)	VMZ2708	BER BARRIER	1	
6 (1)	VSC4618	CCD SHIELD CASE	1	
7 (1)	VXA5933	MECH. FIXING ANGLE U.	1	
8 (1)	VGL0765	TALLY PANEL	1	
9 (1)	VGQ4498	FRONT SCREW	1	
10 (1)	VYK7956	FRONT CASE (1) U.	1	NV-DS1EG/B
10 (1)	VYK8112	FRONT CASE (1) U.	1	NV-DS1EN
10 (1)	VYK7925	FRONT CASE (1) U.	1	NV-DS5EG/B/EN
11 (1)	VYQ1412	LENS HOOD U.	1	
12 (1)	VYK7682	MECH. FIXING PIECE U.	1	
13 (1)	VMG1056	RUBBER	2	
14 (1)	VYK7934	SIDE CASE R (2) U.	1	NV-DS1EG/B/EN
14 (1)	VYK7916	SIDE CASE R (2) U.	1	NV-DS5EG/B/EN
15 (1)	VMP5408	MULTICONNECTOR ANGLE A	1	
16 (1)	VGQ4495	GRIP COVER	1	
17 (1)	VYK7845	SIDE CASE L (1) U.	1	
18 (1)	VMA9749	REAR FIXING ANGLE	1	
19 (1)	VMA9770	GRIP ANGLE	1	
20 (1)	VYC0780	GRIP BELT U.	1	
21 (1)	VEK8154	ZOOM OPERATION U.	1	
22 (1)	VEK8160	DEW SENSOR	1	
23 (1)	VMG0763	RUBBER SWITCH	1	
24 (1)	VGF0690	JACK COVER	1	
25 (1)	VGL0764	VTR CHANGE PANEL	1	
26 (1)	VGQ4272	S/S BUTTON PIECE	1	
27 (1)	VGQ4492	PHOTO SHOT BUTTON HOLDER	1	
28 (1)	VGQ4493	EJECT BUTTON HOLDER	1	
29 (1)	VGQ4494	S/S LEVER	1	
30 (1)	VGQ4515	B ESD PLATE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
31 (1)	VGU7574	PHOTO SHOT BUTTON	1	
32 (1)	VGU7575	EJECT BUTTON	1	
33 (1)	VGU7576	VTR CHANGE BUTTON	1	
34 (1)	VGU7577	S/S BUTTON	1	
35 (1)	VMC1271	S/S CLICK SPRING	1	
36 (1)	VMP5412	DEW FIXING ANGLE	1	
37 (1)	VYK7990	REAR CASE (1) U.	1	
38 (1)	VYK7929	CASSETTE COVER U.	1	
38-1 (1)	VMB3148	CASSETTE COVER SPRING	1	
38-2 (1)	VMP5413	CASSETTE FIXING BASE	1	
39 (1)	VYF2423	LENS HOOD CAP U.	1	
39-1 (1)	VGQ2750	LENS HOOD STRAP	1	
40 (1)	VMP5552	MULTICONNECTOR ANGLE B	1	NV-DS1EG/B/EN
B1 (1)	VHD1100	SCREW	2	
B2 (1)	XQN16+BJ5	SCREW	2	
B3 (1)	XQN2+BJ4	SCREW	6	
B4 (1)	XQN16+B15	SCREW	1	
B5 (1)	XQN16+BF25FZ	SCREW	1	
B7 (1)	XQN16+BJ6FN	SCREW	2	NV-DS5EG/B/EN
B8 (1)	XQN16+B5FN	SCREW	6	
B9 (1)	XQN16+B5FZ	SCREW	2	
B10 (1)	XQN2+BJ6FN	SCREW	2	
B11 (1)	XQN2+B35FN	SCREW	1	
B12 (1)	XQN16+B3FZ	SCREW	5	
B13 (1)	XQN2+B25	SCREW	1	
B14 (1)	XQN16+BJ4	SCREW	5	
B15 (1)	XQN16+BJ4FZ	SCREW	3	
B16 (1)	VHD1096	SCREW	3	
B17 (1)	XQN16+B25FZ	SCREW	3	
B18 (1)	VHD0794	SCREW	1	
B19 (1)	XQN2+BJ35FZ	SCREW	1	
B20 (1)	XQN2+B3FZ	SCREW	1	
B21 (1)	XQN2+B4FZ	SCREW	1	
B22 (1)	VHD0866	SCREW	3	
B23 (1)	XQN14+AJ5FN	SCREW	1	NV-DS1EG/B/EN
B24 (1)	XQN2+B3FZ	SCREW	1	NV-DS1EG/B/EN
B25 (1)	VHD1105	SCREW	1	

❷ FRAME & CASING PARTS SECTION (2) FOR NV-DS1


FOR NV-DS1
G
F
E
D
C
B
A
1
2
3
4
5
(137)
(145)
EVF (A)
C.B.A.
E
(131)
(134)
(135)
(138)
(132)
(144)
(136)
B103
(142)
(133)
E
EVF (B)
C.B.A.
(147)-1
(147)
(146)
B115
(143)
B107
B107
(141)
(139)
(140)
B105
B105
(127)
(126)
(129)
(128)
(124)
B103
(123)
B103
(125)
(120)
(122)
(121)
B103
VTR MAIN
C.B.A.
E
B104
B104
(103)
(102)
(101)
B105
(107)
B105
B108
B108
(114)
(118)
B109
B110
B105
(108)
(110)
(106)
E CAMERA
C.B.A.
B113
B114
B113
(130)
(109)
B102
(117)
(148)
(104)
B106
(112)
B113

❷ FRAME & CASING PARTS SECTION (2) FOR NV-DS5

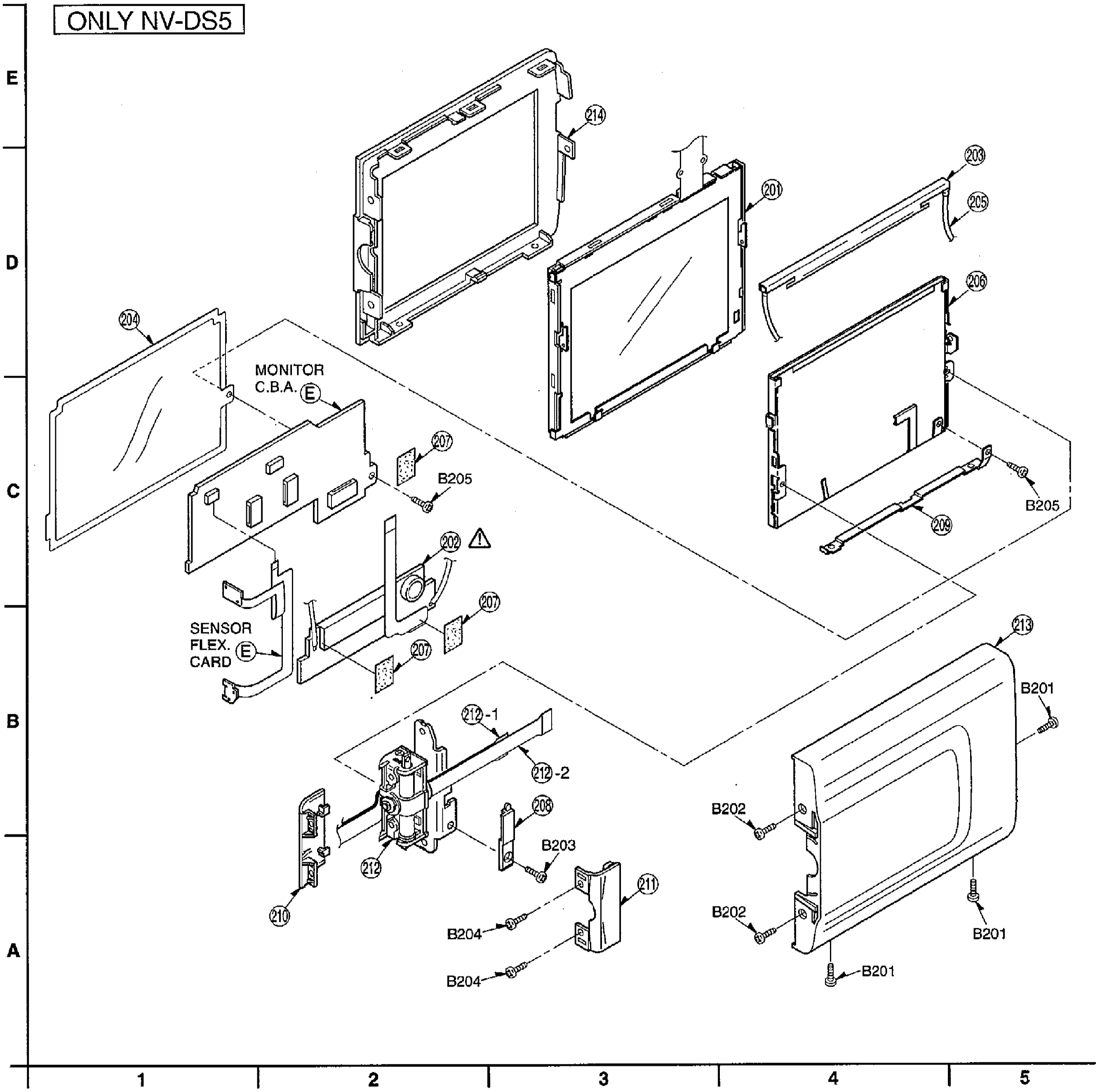

FOR NV-DS5
G
F
E
D
C
B
A
1
2
3
4
5
(137)
(145)
EVF (A)
C.B.A.
E
(131)
(134)
B103
(142)
(144)
(136)
(136)
(138)
(132)
(147)-1
(147)
(133)
(143)
B107
B107
(141)
(139)
(140)
B105
E
EVF (B)
C.B.A.
(146)
B115
B105
(127)
(126)
(129)
(128)
(123)
(124)
B103
B103
VTR MAIN
C.B.A.
E
B104
B104
(103)
(102)
(101)
B105
(119)-1
(119)
(107)
(125)
(120)
B103
(122)
(121)
B105
B108
B108
B105
E CAMERA
C.B.A.
(114)
(118)
B109
(108)
(110)
(105)
B116
B102
B116
(106)
(111)
B112
(117)
(148)
(104)
(109)
B117
(116)
(115)
(112)
(116)
(113)
B112
B101

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
101 (2)	VWJ13C8045AA	MAIN-FRONT FLEX. CARD	1	FP4001 - FP4801
102 (2)	VWJ16C8050AA	MAIN-REAR OP.. FLEX. CARD	1	FP6002 - FP6701
103 (2)	VGQ4644	MAIN BARRIER	1	
104 (2)	VEK8161	BATTERY TERMINAL U.	1	
105 (2)	VGU7557	BATTERY LOCK KNOB	1	
106 (2)	VGQ4449	LCD LOCK LEVER	1	NV-DS5EG/B/EN
107 (2)	VGQ4603	CCD PROTECT PIECE	1	NV-DS5EG/B/EN
107 (2)	VGQ4688	R-CAP	1	NV-DS1EG/B/EN
108 (2)	VGQ4448	BATTERY LOCK HOLDER	1	
109 (2)	VMB2805	BATTERY PUSH SPRING	1	
110 (2)	VMB3143	BATTERY LOCK SPRING	1	
119 (2)	VYK7694	SPEAKER U.	1	NV-DS5EG/B/EN
111 (2)	VMB3145	LCD LOCK SPRING	1	NV-DS5EG/B/EN
112 (2)	VMP5386	BATTERY FIXING ANGLE	1	
113 (2)	VMP5388	MAGNET FIXING ANGLE (A)	1	NV-DS5EG/B/EN
114 (2)	VMP5389	EVF FIXING ANGLE	1	
115 (2)	VMP5407	MAGNET FIXING ANGLE (B)	1	NV-DS5EG/B/EN
116 (2)	VSQ1041	LCD ROTARY DET. MAGNET	2	NV-DS5EG/B/EN
117 (2)	VYK7934	SIDE CASE R (2) U.	1	NV-DS1EG/B/EN
117 (2)	VYK7916	SIDE CASE R (2) U.	1	NV-DS5EG/B/EN
118 (2)	VYK7917	TOP OPERATION U.	1	
119-1 (2)	VEE0A50	SPEAKER CORD	1	
120 (2)	VGQ4446	BATTERY DOOR COVER	1	
121 (2)	VGQ4447	DOOR KNOB HOLDER	1	
122 (2)	VGU7556	BATTERY DOOR KNOB	1	
123 (2)	VKF2783	BATTERY DOOR (TOP)	1	
124 (2)	VKF2734	BATTERY DOOR (BOTTOM)	1	
125 (2)	VMB2815	EYE CAP LOCK SPRING	1	
126 (2)	VMB3144	BATTERY DOOR SPRING	1	
127 (2)	VMP5390	BATTERY DOOR ROTARY ANGLE	1	
128 (2)	VMP5391	BATTERY DOOR FIXING ANGLE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
129 (2)	VMS6210	BATTERY DOOR SHAFT	1	
130 (2)	VKM4833	BATTERY CASE	1	NV-DS1EG/B/EN
131 (2)	F05KM100	EVF PANEL	1	
132 (2)	VJB28242	EVF CONNECT FLEX. CARD	1	
133 (2)	VJB08294	EVF FLEX. CARD	1	FP801 - FP3501
134 (2)	VGQ4664	LCD FIXING HOLDER	1	
135 (2)	VGQ4481	LAMP HOLDER	1	
136 (2)	VGQ4575	LCD FLEX. CARD GUARD	1	
137 (2)	VGQ4576	LAMP BARRIER	1	
138 (2)	VGQ4615	SHIELD SHEET	1	
139 (2)	VGQ4649	EVF SLIDE SPACER	1	
140 (2)	VKC0553	EVF ROTARY SHAFT U.	1	
141 (2)	VKM4715	EVF CASE (L)	1	
142 (2)	VKM4716	EVF CASE (R)	1	
143 (2)	VMC1357	EVF CLICK SPRING	1	
144 (2)	VSC4650	SHIELD CASE (B)	1	
145 (2)	VKW2427	EVF PROTECT PIECE	1	
146 (2)	VYK7921	SLIDE CASE U.	1	
147 (2)	VYK8100	EYE SIGHT CASE U.	1	
147-1 (2)	VMG1087	EYE CAP	1	
148 (2)	VGQ4524	BLIND BARRIER	1	
B101 (2)	VHD0768	SCREW	2	NV-DS5EG/B/EN
B102 (2)	VHD1093	SCREW	1	
B103 (2)	XQN16+BJ4FZ	SCREW	7	
B104 (2)	VHD1099	SCREW	2	
B106 (2)	XQN2+BJ5FN	SCREW	2	NV-DS1EG/B/EN
B107 (2)	VHD1122	SCREW	2	
B108 (2)	XQN2+BJ35FZ	SCREW	2	
B109 (2)	XQN16+BJ6FN	SCREW	1	
B110 (2)	XQN2+BJ4	SCREW	1	
B112 (2)	XQN2+B4FZ	SCREW	2	NV-DS5EG/B/EN
B113 (2)	XQN2+BJ4FZ	SCREW	3	NV-DS1EG/B/EN
B114 (2)	XQN2+BJ3FZ	SCREW	1	NV-DS1EG/B/EN
B115 (2)	XQS16+C3FN	SCREW	2	
B116 (2)	XQN2+B3FN	SCREW	2	NV-DS5EG/B/EN
B117 (2)	XQN2+BJ35FZ	SCREW	2	NV-DS5EG/B/EN

❸ LCD PARTS SECTION FOR NV-DS5

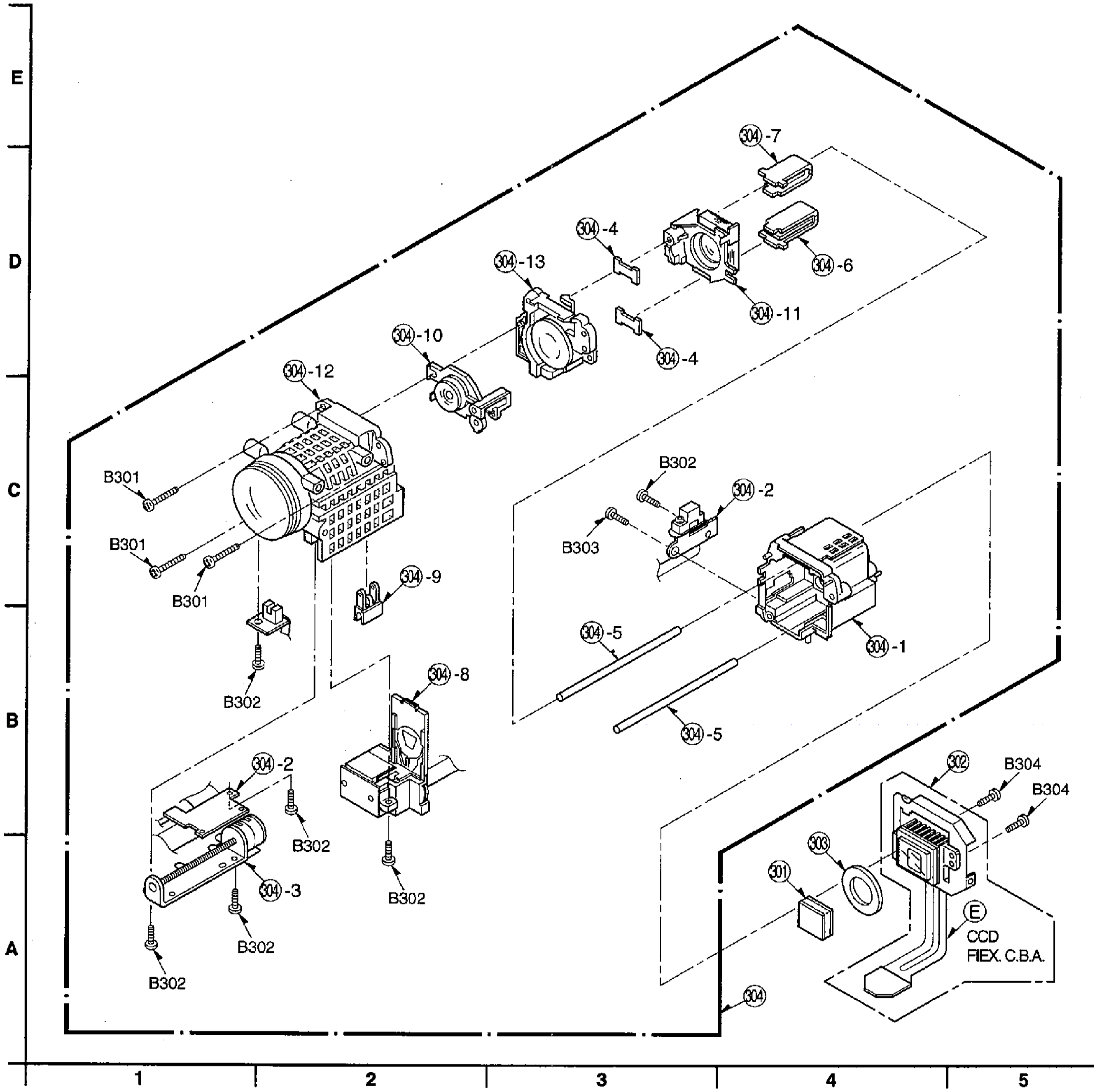

ONLY NV-DS5
E
D
C
B
A
1
2
3
4
5
214
201
203
205
206
204
MONITOR C.B.A. Ⓔ
207
B205
202
207
207
SENSOR FLEX. CARD Ⓔ
209
B205
213
B201
212-1
212-2
208
B202
B203
212
210
211
B204
B204
B202
B201
B201

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 201 (3)	EDTCA16QA0	LCD PANEL	1	
202 (3)	VEK8191	BACK LIGHT C. B. A	1	
203 (3)	VGL0759	REFLECTOR	1	
204 (3)	VGQ4469	LCD SHIELD SHEET	1	
205 (3)	VLL0205	LAMP U.	1	
206 (3)	VYQ1411	BACK LIGHT PANEL U.	1	
207 (3)	VGQ4180	PROTECT SHEET	3	
208 (3)	VGQ4468	FLEX. CARD FIXING PIECE	1	
209 (3)	VMP5392	CASE FIXING ANGLE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
210 (3)	VGQ4488	SHAFT BOTTOM COVER	1	
211 (3)	VGQ4489	SHAFT TOP COVER	1	
212 (3)	VXD0268	LCD ROTARY SHAFT (1) U.	1	
212-1 (3)	VJB26192	MONITOR SIGNAL FLEX.	1	
212-2 (3)	VJB26193	MONITOR OPERATION FLEX.	1	
213 (3)	VYK7923	LCD TOP CASE	1	NV-DS5EG/B
213 (3)	VYK8108	LCD TOP CASE	1	NV-DS5EN
214 (3)	VYK7699	LCD BOTTOM CASE	1	
B201 (3)	XQN16+B35FN	SCREW	3	
B202 (3)	VHD1119	SCREW	2	
B203 (3)	XQS2+C45	SCREW	1	
B204 (3)	XQN2+BF4FN	SCREW	2	
B205 (3)	XQN16+BF2	SCREW	2	

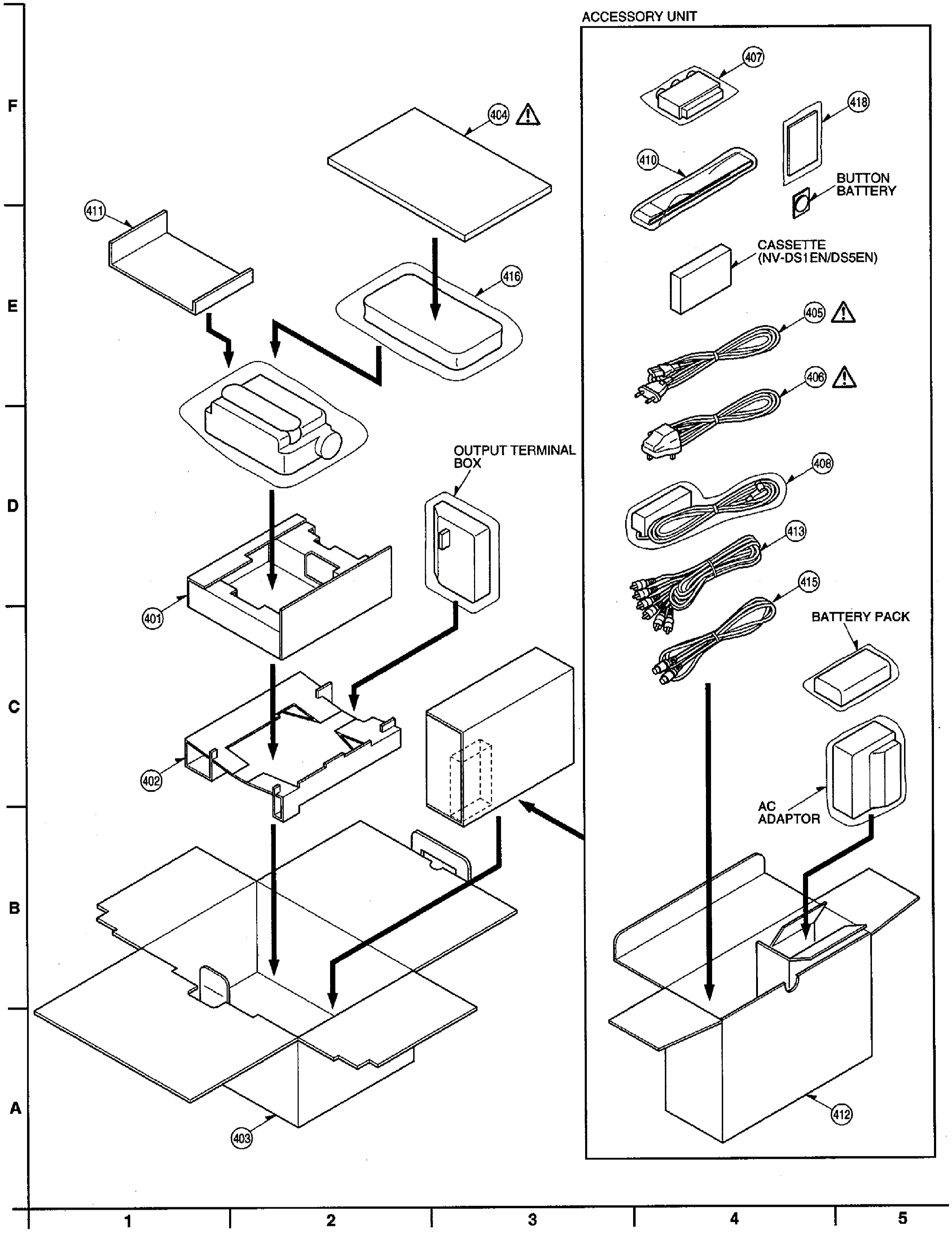
❹ CAMERA LENS SECTION


E
D
C
B
A
304-7
304-4
304-6
304-13
304-11
304-10
304-4
304-12
B302
304-2
B301
B303
B301
304-9
B301
304-1
304-5
B302
304-8
304-5
304-2
302
B304
B304
B302
303
304-3
B302
301
E
CCD
FlEX. C.B.A.
B302
B302
304
1
2
3
4
5

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
301 (4)	VDL0421	CRYSTAL FILTER	1	
302 (4)	VEK8227	CCD U.	1	
302-* (4)	VJB22265	CCD FLEX. CARD	1	
303 (4)	VMX2646	CCD CUSHION	1	
304 (4)	VXW0354	LENS U.	1	
304-1 (4)	VDW0478	MASTER FLANGE	1	
304-2 (4)	VEK8090	LENS FLEX. CARD	1	
304-3 (4)	VEM0621	ZOOM MOTOR U.	1	
304-4 (4)	VMA9683	SIDE YOKE	2	
304-5 (4)	VMS6182	GUIDE POLE	2	
304-6 (4)	VXA5916	A YOKE U.	1	
304-7 (4)	VXA5917	B YOKE U.	1	
304-8 (4)	VXL2738	IRIS U.	1	
304-9 (4)	VXL2775	2ND RACK A U.	1	
304-10 (4)	VXP1809	2ND MOVING FRAME U.	1	
304-11 (4)	VXP1810	4TH MOVING FRAME U.	1	
304-12 (4)	VXQ0644	MAIN FRAME U.	1	
304-13 (4)	VXQ0645	3RD MOVING FRAME U.	1	
B301 (4)	XQN16+CJ8	SCREW	3	
B302 (4)	XQN16+CJ5	SCREW	6	
B303 (4)	XQN16+CJ5FZ	SCREW	1	
B304 (4)	XQN16+CJ6	SCREW	2	

❺ PACKING PARTS & ACCESSORIES SECTION


ACCESSORY UNIT
407
418
404 ⚠
410
BUTTON BATTERY
411
CASSETTE (NV-DS1EN/DS5EN)
416
405 ⚠
406 ⚠
OUTPUT TERMINAL BOX
408
413
415
BATTERY PACK
401
402
AC ADAPTOR
403
412
F
E
D
C
B
A
1
2
3
4
5

Note: 1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
401 (5)	VPN4765	CUSHION (UPPER)	1	NV-DS1EG/B/EN
401 (5)	VPN4764	CUSHION (UPPER)	1	NV-DS5EG/B/EN
402 (5)	VPN4737	CUSHION (LOWER)	1	NV-DS1EG/B/EN
402 (5)	VPN4736	CUSHION (LOWER)	1	NV-DS5EG/B/EN
403 (5)	VPK1995	PACKING	1	NV-DS1EG
403 (5)	VPK1997	PACKING	1	NV-DS1B
403 (5)	VPK1998	PACKING	1	NV-DS1EN
403 (5)	VPK2001	PACKING	1	NV-DS5EG
403 (5)	VPK2002	PACKING	1	NV-DS5B
403 (5)	VPK2003	PACKING	1	NV-DS5EN
⚠ 404 (5)	VQT7166	OPERATING INSTRUCTIONS (GERMAN, ENGLISH, FRENCH, SPANISH)	1	NV-DS1EG
⚠ 404 (5)	VQT7167	OPERATING INSTRUCTIONS (ITALIAN, DUTCH, SWEDISH, DANISH)	1	NV-DS1EG
⚠ 404 (5)	VQT7164	OPERATING INSTRUCTIONS (ENGLISH)	1	NV-DS1B
⚠ 404 (5)	VQT7165	OPERATING INSTRUCTIONS (CHINESE, ENGLISH, RUSSIAN, ARABIC)	1	NV-DS1EN
⚠ 404 (5)	VQT7151	OPERATING INSTRUCTIONS (GERMAN, ENGLISH, FRENCH, SPANISH)	1	NV-DS5EG
⚠ 404 (5)	VQT7152	OPERATING INSTRUCTIONS (ITALIAN, DUTCH, SWEDISH, DANISH)	1	NV-DS5EG
⚠ 404 (5)	VQT7149	OPERATING INSTRUCTIONS (ENGLISH)	1	NV-DS5B
⚠ 404 (5)	VQT7150	OPERATING INSTRUCTIONS (CHINESE, ENGLISH, RUSSIAN, ARABIC)	1	NV-DS5EN
⚠ 405 (5)	VJA0998	AC CORD	1	NV-DS1EG/EN/DS5EG/EN
⚠ 406 (5)	VJA0940	AC CORD	1	NV-DS1B/EN/DS5B/EN
407 (5)	VFA0151	21 PIN ADAPTOR	1	NV-DS1EG/B/DS5EG/B
408 (5)	VEK8226	DC CABLE U.	1	
410 (5)	VFC2494	SHOULDER BELT	1	
411 (5)	VPN4770	PAD	1	NV-DS1EG/B/DS5EG/B
412 (5)	VPN4765	ACCESSORIES PACKING	1	NV-DS1EG/B/EN
412 (5)	VPN4764	ACCESSORIES PACKING	1	NV-DS5EG/B/EN
413 (5)	VJA0788	AV OUTPUT CABLE	1	
415 (5)	VJA0658	S-VIDEO CABLE	1	
416 (5)	VFC2623	SOFT CASE	1	NV-DS1EN/DS5EN
418 (5)	VEQ1996	REMOTE CONTROLLER	1	NV-DS1EG/B
418 (5)	VEQ1999	REMOTE CONTROLLER	1	NV-DS1EN
418 (5)	VEQ1995	REMOTE CONTROLLER	1	NV-DS5EG/B
418 (5)	VEQ1997	REMOTE CONTROLLER	1	NV-DS5EN

4-2. ELECTRICAL REPLACEMENT PARTS LIST

Note: 1. Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE : Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.
3. Unless otherwise specified,
All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICROFARADS(uf), P=uuF.
4. The P.C. Board units marked width "■" show below the main assembled parts.
5. The marking (RTL) indicaters the retention time is limited for this item.
After the discontinuation of this assembly in production, it will no longer be available.

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP03E26A	VTR MAIN C.B.A.	1	(RTL)
		(Page: 4-11)		
■	VEP23450A	CAMERA C.B.A.	1	(RTL)
		(Page: 4-16)		
■	VEP01801A	POWER C.B.A.	1	(RTL)
		(Page: 4-18)		
■	VEP02561A	DRIVE C.B.A.	1	(RTL)
		(Page: 4-19)		
■	VEP00Y65A	LCD/IF C.B.A.	1	(RTL)
		(Page: 4-20)		
■	VYK7917	TOP OPERATION C.B.A.	1	
		(Page: 4-20)		
■	VEP28240C	E.V.F. (A) C.B.A.	1	(RTL)
		(Page: 4-20)		
■	VEP28244A	E.V.F. (B) C.B.A.	1	(RTL)
		(Page: 4-20)		
■	VEP26196B	MONITOR C.B.A.	1	(RTL)
		(Page: 4-20)		NV-DS5EG/B/EN
■	VEP06C49A	SENSOR FLEX. CARD	1	(RTL)
		(Page: 4-21)		NV-DS5EG/B/EN
■	VEP04674B	FRONT C.B.A.	1	(RTL)
		(Page: 4-21)		
■	VEP06C16A	REAR OPERATION C.B.A.	1	(RTL)
		(Page: 4-22)		
■	VEP05352A	HEAD AMP C.B.A.	1	(RTL)
		(Page: 4-22)		
■	VEP22265A	CCD FLEX. CARD C.B.A.	1	(RTL)
		(Page: 4-22)		
■	VEP03E26A	VTR MAIN C.B.A.		(RTL)
C601	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	1	
C602	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C603-10	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	8	
C611-13	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	3	
C614	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C615	ECUX1H181JCQ	C. CAPACITOR CH 50V 180P	1	
C616	ECUX1H680JCQ	C. CAPACITOR CH 50V 68P	1	
C617-19	ECUX1H560JCQ	C. CAPACITOR CH 50V 56P	3	
C620-26	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	7	
C630-32	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	3	
C633	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	1	
C634	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C635-42	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	8	
C643-45	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	3	
C646	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C647	ECUX1H181JCQ	C. CAPACITOR CH 50V 180P	1	
C648	ECUX1H680JCQ	C. CAPACITOR CH 50V 68P	1	
C649-51	ECUX1H560JCQ	C. CAPACITOR CH 50V 56P	3	
C652-58	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	7	
C662-65	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	4	
C666	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C667	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C668	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C669	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C671, 72	VCS0JJ106	E. CAPACITOR 6.3V 10U	2	
C673, 74	ECUM1C474KBN	C. CAPACITOR CH 16V 0.47U	2	
C675	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C676	ECUX1E222KBQ	C. CAPACITOR CH 25V 2200P	1	
C677	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C678	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	1	
C679	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	1	
C2001, 02	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	2	
C2003-05	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C2006	ECUX1H120JCQ	C. CAPACITOR CH 50V 12P	1	
C2007	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2008	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2009	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2010	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2011	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2012	ECUX1C473KBV	C. CAPACITOR CH 16V 0.047U	1	
C2013	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C2014	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2015	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2016	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2017	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2018	ECST0JY475Z	T. CAPACITOR CH 6.3V 4.7U	1	
C2019	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2020	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2021	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2022	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2023-25	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C2026	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2027	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2028	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2029	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C2030	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2031, 32	ECUX1H221JCQ	C. CAPACITOR CH 50V 220P	2	
C2033	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2034	ECST1CY225Z	T. CAPACITOR CH 16V 2.2U	1	
C2035, 36	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	2	
C2037	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C2038	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C2040	ECUX1H120JCQ	C. CAPACITOR CH 50V 12P	1	
C2041	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2042	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C2199	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3002	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3003	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C3004	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3005-09	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	5	
C3010-13	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	4	
C3015	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3018	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3020	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	1	
C3021	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C3022	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3023	ECST0GY226Z	T. CAPACITOR CH 4V 22U	1	
C3024	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3026	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3027	ECUX1H050CCQ	C. CAPACITOR CH 50V 5P	1	
C3028	ECUX1E561KBQ	C. CAPACITOR CH 25V 560P	1	
C3030	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3035	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3036	ECUX1H100CCQ	C. CAPACITOR CH 50V 10P	1	
C3037	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3038, 39	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	2	
C3040, 41	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	2	
C3042	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3043-48	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	6	
C3050, 51	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3053, 54	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3055-58	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	4	
C3060, 61	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	2	
C3065	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3066	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3067	ECST0JX226Z	T. CAPACITOR CH 6.3V 22U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3071, 72	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3073-77	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	5	
C3078, 79	ECUX1H050CCQ	C. CAPACITOR CH 50V 5P	2	
C3080	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C3081	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3083, 84	ECST0JX226Z	T. CAPACITOR CH 6.3V 22U	2	
C3086	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3088	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3089	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3090	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3091	ECST0JX226Z	T. CAPACITOR CH 6.3V 22U	1	
C3092	ECUX1A105ZFV	C. CAPACITOR CH 10V 1U	1	
C3094	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3096	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3201, 02	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C3203, 04	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3205	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3206, 07	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C3208	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C3209-11	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3212, 13	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	2	
C3214	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3215	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3216-18	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3219	ECUX1E273KBV	C. CAPACITOR CH 25V 0.027U	1	
C3220-22	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3223	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C3224	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3225-27	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3228	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C3229	ECUX1E331KBQ	C. CAPACITOR CH 25V 330P	1	
C3230	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3231	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C3232-34	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3235	ECUX1E681KBQ	C. CAPACITOR CH 25V 680P	1	
C3236-38	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3239	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3240	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3241, 42	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3243-45	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
C3246	ECUM0J225KBN	C. CAPACITOR CH 6.3V 2.2U	1	
C3247-52	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	6	
C3253	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3254, 55	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3256	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3257	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3258	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	1	
C3259	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3261	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3262	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3264	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C3265	ECUX1H220JCQ	C. CAPACITOR CH 50V 22P	1	
C3802-04	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	3	
C3806	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C3807	ECUX1A105ZFV	C. CAPACITOR CH 10V 1U	1	
C3808	ECUX1E271KBQ	C. CAPACITOR CH 25V 270P	1	
C3809	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C3813	ECUX1A104KBQ	C. CAPACITOR CH 10V 0.1U	1	
C3814	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C3816	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C3817, 18	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	2	
C3820	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3822	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C3824-26	EEJK0JS106	E. CAPACITOR 6.3V 10U	3	
C3827	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C3901	ECST0JC107Z	T. CAPACITOR CH 6.3V 100U	1	
C3902	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C4001	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4002	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C4003, 04	VCS0JJ106	E. CAPACITOR 6.3V 10U	2	
C4005, 06	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	2	
C4007	ECST0JX226Z	T. CAPACITOR CH 6.3V 22U	1	
C4011	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4012	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C4013, 14	ECUX1H121JCQ	C. CAPACITOR CH 50V 120P	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4015, 16	VCS0JJ106	E. CAPACITOR 6.3V 10U	2	
C4201, 02	ECUX1C333KBQ	C. CAPACITOR CH 16V 0.033U	2	
C4203	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C4204	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C4205	ECUX1E222KBQ	C. CAPACITOR CH 25V 2200P	1	
C4206	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C4207	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C4208	ECUX1E122KBQ	C. CAPACITOR CH 25V 1200P	1	
C4209, 10	ECUM1C474KBN	C. CAPACITOR CH 16V 0.47U	2	
C4211	ECUX1E122KBQ	C. CAPACITOR CH 25V 1200P	1	
C4212, 13	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	2	
C4214, 15	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	2	
C4218	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C4219	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4501	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4502	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	1	
C4503-05	VCS0JJ106	E. CAPACITOR 6.3V 10U	3	
C4506	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4507	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C4508	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C4509, 10	VCS0JJ106	E. CAPACITOR 6.3V 10U	2	
C4511	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C4512	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C4513, 14	VCS0JJ106	E. CAPACITOR 6.3V 10U	2	
C4515	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C4701	ECUX1H390JCV	C. CAPACITOR CH 50V 39P	1	
C4702	VCS0JJ106	E. CAPACITOR 6.3V 10U	1	
C4704	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C4705	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	1	
C4706	ECUX1H153KBV	C. CAPACITOR CH 50V 0.015U	1	
C4798, 99	ECUX1H153KBV	C. CAPACITOR CH 50V 0.015U	2	
C6501	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C6502, 03	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	2	
C6504	ECEV1CA101	E. CAPACITOR CH 16V 100U	1	
D2001-04	MA728	DIODE	4	
D2005	1SS355	DIODE	1	
D2006	MA133	DIODE	1	
D2007	1SS355	DIODE	1	
D2010	MA728	DIODE	1	
D2011	MA132WK	DIODE	1	
D2012	MA132WA	DIODE	1	
D2013	MA728	DIODE	1	
D2015-18	MA728	DIODE	4	
D2020-22	MA728	DIODE	3	
D2023	1SS355	DIODE	1	
D2024, 25	MA728	DIODE	2	
D3201	MA132WA	DIODE	1	
D3202	MA728	DIODE	1	
D4001	MA133	DIODE	1	
D4002	MA728	DIODE	1	
D6501-04	MA132WA	DIODE	4	
D6505	MA132A	DIODE	1	
D6506	MA132WA	DIODE	1	
FP3201	VJS3320B024	CONNECTOR (FEMALE) 24P	1	
FP4001	VJS3319B013	CONNECTOR (FEMALE) 13P	1	
FP6001	VJS3319B014	CONNECTOR (FEMALE) 14P	1	
FP6002	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
IC601, 02	IR3Y35M	IC	2	
IC603	NJM78L12UA	IC	1	
IC604	BU4053BCFV	IC	1	
IC605	PQ20VZ1U	IC	1	
IC606	XC62AP2802M	IC	1	
IC609	BA7071F	IC	1	
IC610	TC7S14FU	IC	1	
IC611	TC7ST04FU	IC	1	
IC613, 14	TC7S14FU	IC	2	
IC2001	M31020MA105	IC	1	
IC2002	S3511AEFS	IC	1	
IC2003	UPD6462GS626	IC	1	
IC2004	S81333HGKF	IC	1	
IC2005	S29L330AFST	IC	1	
IC2006	M62370GP	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC2007	TA75W393FU	IC	1	
IC2008	TA75S393F	IC	1	
IC2009	S81238SG08	IC	1	
IC2010	XC61AN2901MR	IC	1	
IC2011	D784037GK508	IC	1	
IC2012	TC4W53FU	IC	1	
IC2013	MM1320ENRE	IC	1	
IC2014, 15	TC4W53FU	IC	2	
IC3001	T9P74EF	IC	1	
IC3002	MN47V07AF	IC	1	
IC3003	MN67373	IC	1	
IC3005	BH7086KV	IC	1	
IC3006	NJM2538V	IC	1	
IC3007	LZ9FC144	IC	1	
IC3201	M65500FP	IC	1	
IC3202	MNV4260	IC	1	
IC3203	AN3741FAP	IC	1	
IC3204	AD9057BRS-60	IC	1	
IC3205	TC7SH08FU	IC	1	
IC3801	TSB13LV01GGJ	IC	1	
IC4001	NJM3414AV	IC	1	
IC4201	BA7785FS	IC	1	
IC4501	AK4513	IC	1	
IC4701	M9802-206GAK	IC	1	
IC6501-03	TC7W241FU	IC	3	
IC6505, 06	TC7SH08FU	IC	2	
JK3801	VJJ0568	DV TERMINAL	1	
L601-03	VLQ0807K100	COIL 10UH	3	
L605	VLQ0807K100	COIL 10UH	1	
L606, 07	VLQ0807K220	COIL 22UH	2	
L2001	VLQ0807K100	COIL 10UH	1	
L2002	VLQ0426J330	COIL 33UH	1	
L2003	VLQ0807K100	COIL 10UH	1	
L3002	VLQ0426J5R6	COIL 5.6UH	1	
L3003, 04	VLQ0807K100	COIL 10UH	2	
L3005	VLQ0807K220	COIL 22UH	1	
L3006	VLQ0807K100	COIL 10UH	1	
L3008	VLQ0807K100	COIL 10UH	1	
L3009	VLQ0426J100	COIL 10UH	1	
L3010, 11	VLQ0807K100	COIL 10UH	2	
L3201	VLQ0807K100	COIL 10UH	1	
L3202	VLQ0807M4R7	COIL 4.7UH	1	
L3203-07	VLQ0807K100	COIL 10UH	5	
L3208	VLQ0807K220	COIL 22UH	1	
L3209	VLQ0807M4R7	COIL 4.7UH	1	
L3801-03	VLQ0807K100	COIL 10UH	3	
L3901	VLQ0807K220	COIL 22UH	1	
L4001	VLQ0807K100	COIL 10UH	1	
L4201	VLQ0807K100	COIL 10UH	1	
L4202	VLQ0464K100	COIL 10UH	1	
L4502	VLQ0807K100	COIL 10UH	1	
L6501	VLQ0807K100	COIL 10UH	1	
L6502	VLQ0807K220	COIL 22UH	1	
LB3001-03	VLP0145	COIL	3	
LB3004	VLP0155	COIL	1	
LB3005, 06	VLP0329A601	COIL	2	
LB3007	VLP0329A241	COIL	1	
P3001	VJP3172D002	CONNECTOR (MALE) 2P	1	
PP2001	VJP3989C050	CONNECTOR (MALE) 50P	1	
PP3001	VJP3884B060	CONNECTOR (MALE) 60P	1	
PP3002	VJP3989C070	CONNECTOR (MALE) 70P	1	
PS1001	VJS3846A080	CONNECTOR (FEMALE) 80P	1	
PS3001	VJS3846A030	CONNECTOR (FEMALE) 30P	1	
PS3002	VJS3846A080	CONNECTOR (FEMALE) 80P	1	
Q601-06	2SB970X	TRANSISTOR	6	
Q607	2SB1462-R	TRANSISTOR	1	
Q608	2SB970X	TRANSISTOR	1	
Q609-11	2SD2216	TRANSISTOR	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q2001	2SB970X	TRANSISTOR	1	
Q2002	2SB1218	TRANSISTOR	1	
Q2003	2SD1820	TRANSISTOR	1	
Q2006	2SD2216	TRANSISTOR	1	
Q2008	XP6501	TRANSISTOR	1	
Q3001, 02	2SD2216	TRANSISTOR	2	
Q3201	2SD2216	TRANSISTOR	1	
Q3202	2SB1462-R	TRANSISTOR	1	
Q3203	2SC4627	TRANSISTOR	1	
Q3204	2SD2216	TRANSISTOR	1	
Q4001	XN4504	TRANSISTOR	1	
Q4701	2SD1979	TRANSISTOR	1	
Q4702	XP4401	TRANSISTOR	1	
Q6501	2SB1073	TRANSISTOR	1	
QR601	MRN1103	TRANSISTOR-RESISTOR	1	
QR604-06	MRN1103	TRANSISTOR-RESISTOR	3	
QR607	XP4314	TRANSISTOR	1	
QR2001	MRN2111	TRANSISTOR-RESISTOR	1	
QR2002, 03	XP4213	TRANSISTOR-RESISTOR	2	
QR2004	MRN2111	TRANSISTOR-RESISTOR	1	
QR2005	UN2130X	TRANSISTOR-RESISTOR	1	
QR2006	MRN2111	TRANSISTOR-RESISTOR	1	
QR2007	MRN1104	TRANSISTOR-RESISTOR	1	
QR2008	XP1213	TRANSISTOR-RESISTOR	1	
QR2009, 10	MRN2111	TRANSISTOR-RESISTOR	2	
QR2011	MRN1104	TRANSISTOR-RESISTOR	1	
QR2012, 13	MRN1103	TRANSISTOR-RESISTOR	2	
QR3001	MRN1103	TRANSISTOR-RESISTOR	1	
QR4001	MRN1103	TRANSISTOR-RESISTOR	1	
QR4002, 03	MRN2103	TRANSISTOR-RESISTOR	2	
QR4201	MRN1103	TRANSISTOR-RESISTOR	1	
QR4703	XP4312	TRANSISTOR-RESISTOR	1	
R507-12	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	6	
R513, 14	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R515	ERJ2RHD273	M.RESISTOR CH 1/16W 27K	1	
R516	ERJ2RHD104	M.RESISTOR CH 1/16W 100K	1	
R517	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	1	
R518	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R519	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R520	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R521	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R522	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R523	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R524	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R525	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R526	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R527-32	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	6	
R601	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R602, 03	ERJ2RHD102	M.RESISTOR CH 1/16W 1K	2	
R604	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R605	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R606	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R607	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R608	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	1	
R609, 10	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	2	
R611	ERJ2GEJ393	M.RESISTOR CH 1/16W 39K	1	
R612	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R613	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R614, 15	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	2	
R616	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R617	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R619	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R621	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R622	ERJ2GEJ332	M.RESISTOR CH 1/16W 3.3K	1	
R623	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R624	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R625	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R626	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R629	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R631	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R634	ERJ2GEJ183	M.RESISTOR CH 1/16W 18K	1	
R635-37	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	3	
R639	ERJ2GEJ333	M.RESISTOR CH 1/16W 33K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R640	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R642	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R644-46	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	3	
R647	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R648-50	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	3	
R651, 52	ERJ2GEJ683	M. RESISTOR CH 1/16W 68K	2	
R653	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R656-58	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	3	
R659	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R661	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R663	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R664	ERJ2GEJ272	M. RESISTOR CH 1/16W 2. 7K	1	
R665	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R666	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R667, 68	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R673	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R674	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R680	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R681	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R682	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R683	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R685	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R690	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R691-93	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	3	
R694, 95	ERJ2GEJ683	M. RESISTOR CH 1/16W 68K	2	
R696	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R697-99	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	3	
R2002	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2003	ERJ2GEJ220	M. RESISTOR CH 1/16W 22	1	
R2004, 05	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R2006, 07	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2008	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2009	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2011	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R2012	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2013	ERJ2GEJ684	M. RESISTOR CH 1/16W 680K	1	
R2014	ERJ2GEJ474	M. RESISTOR CH 1/16W 470K	1	
R2015	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2016	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R2017, 18	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2019, 20	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	2	
R2021	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2022	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R2023	ERJ2GEJ393	M. RESISTOR CH 1/16W 39K	1	
R2024	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2025	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2026	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2027	ERJ8GEYG330	M. RESISTOR CH 1/8W 33	1	
R2028	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R2029	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2031	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2033	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2034	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R2035	ERJ2RHD183	M. RESISTOR CH 1/16W 18K	1	
R2036	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2037	ERJ2RHD223	M. RESISTOR CH 1/16W 22K	1	
R2038	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2039	ERJ2RHD333	M. RESISTOR CH 1/16W 93K	1	
R2040	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2041	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2042	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2043, 44	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2045	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2046	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2047	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2048	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2049, 50	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R2052	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2053	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R2054	ERJ2GEJ822	M. RESISTOR CH 1/16W 8. 2K	1	
R2055, 56	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2057	ERJ2GEJ822	M. RESISTOR CH 1/16W 8. 2K	1	
R2058	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2059	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2060	ERJ2RHD273	M. RESISTOR CH 1/16W 27K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2061	ERJ2RHD103	M. RESISTOR CH 1/16W 10K	1	
R2062, 63	ERJ2RHD473	M. RESISTOR CH 1/16W 47K	2	
R2064	ERJ2RHD273	M. RESISTOR CH 1/16W 27K	1	
R2065	ERJ2RHD103	M. RESISTOR CH 1/16W 10K	1	
R2066	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2067, 68	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R2069	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2070	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R2072	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2073, 74	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2076, 77	ERJ2GEJ272	M. RESISTOR CH 1/16W 2. 7K	2	
R2078, 79	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2080	ERJ2RHD563	M. RESISTOR CH 1/16W 56K	1	
R2081	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2082	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R2083	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2085	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2087	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2088	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2089	ERJ2GEJ122	M. RESISTOR CH 1/16W 1. 2K	1	
R2090, 91	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2092	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2093	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2095	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2096	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2097	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2098-04	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	7	
R2106	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2107	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2108	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2109	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2110	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R2113	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2114, 15	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	2	
R2116	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2117	ERJ2GEJ392	M. RESISTOR CH 1/16W 3. 9K	1	
R2118	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R2119	ERJ2GEJ272	M. RESISTOR CH 1/16W 2. 7K	1	
R2121	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R2122	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2123	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2124, 25	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R2126	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2127	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2128	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2129	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R2130	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2133	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2134	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R2135	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R2136-38	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	3	
R2139	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R2140	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2141, 42	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R2143	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R2199	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3001, 02	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R3004	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3005	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3006	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R3008	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3009	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3010	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3011, 12	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R3013	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R3014	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R3016	ERJ2GEJ101	M. RESISTOR CH 1/16W 100	1	
R3017-19	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	3	
R3020	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R3022	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R3023	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R3024	ERJ2GEJ332	M. RESISTOR CH 1/16W 3. 3K	1	
R3027	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R3028	ERJ2GEJ183	M. RESISTOR CH 1/16W 18K	1	
R3030	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3031	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3032	ERJ2GEJ123	M.RESISTOR CH 1/16W 12K	1	
R3033	ERJ2GEJ153	M.RESISTOR CH 1/16W 15K	1	
R3034	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R3035	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3036	ERJ2GEJ225	M.RESISTOR CH 1/16W 2.2M	1	
R3037	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3038,39	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	2	
R3041	ERJ2GEJ151	M.RESISTOR CH 1/16W 150	1	
R3042	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R3044	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R3046	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3048,49	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	2	
R3050,51	ERJ2GEJ471	M.RESISTOR CH 1/16W 470	2	
R3052	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R3053	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3054	ERJ2GEJ105	M.RESISTOR CH 1/16W 1M	1	
R3055,56	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R3057	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	1	
R3058	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3059	ERJ2GEJ680	M.RESISTOR CH 1/16W 68	1	
R3060	ERJ2GEJ271	M.RESISTOR CH 1/16W 270	1	
R3061	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3075	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3076	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R3078	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R3079	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R3083	ERJ2GEJ121	M.RESISTOR CH 1/16W 120	1	
R3085	ERJ2GEJ121	M.RESISTOR CH 1/16W 120	1	
R3089	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3090,91	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	2	
R3094	ERJ2GEJ391	M.RESISTOR CH 1/16W 390	1	
R3203	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3204	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R3205	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	1	
R3206,07	ERJ2GEJ121	M.RESISTOR CH 1/16W 120	2	
R3208	ERJ2GEJ822	M.RESISTOR CH 1/16W 8.2K	1	
R3209	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3210	ERJ2GEJ561	M.RESISTOR CH 1/16W 560	1	
R3211	ERJ2GEJ680	M.RESISTOR CH 1/16W 68	1	
R3212	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3213	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	1	
R3214	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R3215	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R3217	ERJ2RHD181	M.RESISTOR CH 1/16W 180	1	
R3218	ERJ2RHD301	M.RESISTOR CH 1/16W 300	1	
R3219	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3220	ERJ2GEJ221	M.RESISTOR CH 1/16W 220	1	
R3221	ERJ2RHD222	M.RESISTOR CH 1/16W 2.2K	1	
R3222	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3223	ERJ2GEJ124	M.RESISTOR CH 1/16W 120K	1	
R3224	ERJ2GEJ562	M.RESISTOR CH 1/16W 5.6K	1	
R3225	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	1	
R3226	ERJ2GEJ391	M.RESISTOR CH 1/16W 390	1	
R3227,28	ERJ2GEJ224	M.RESISTOR CH 1/16W 220K	2	
R3229	ERJ3GEY0R00	M.RESISTOR CH 1/16W 0	1	
R3230	ERJ2GEJ121	M.RESISTOR CH 1/16W 120	1	
R3231	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3232	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3233	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R3234	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3235-37	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	3	
R3238	ERJ2GEJ564	M.RESISTOR CH 1/16W 560K	1	
R3239	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	1	
R3240	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R3241	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R3242	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R3243-45	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	3	
R3247	ERJ2GEJ152	M.RESISTOR CH 1/16W 1.5K	1	
R3248	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3249	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R3251	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R3252	ERJ2RHD391	M.RESISTOR CH 1/16W 390	1	
R3254	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3255	ERJ2GEJ683	M.RESISTOR CH 1/16W 68K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R3801	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3803	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R3804	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3805	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
R3806	ERJ2GEJ394	M.RESISTOR CH 1/16W 390K	1	
R3807	ERJ2RHD272	M.RESISTOR CH 1/16W 2.7K	1	
R3809	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3811-14	ERJ2RKD560	M.RESISTOR CH 1/16W 56	4	
R3815	ERJ2RHD332	M.RESISTOR CH 1/16W 3.3K	1	
R3816	ERJ2GEJ391	M.RESISTOR CH 1/16W 390	1	
R3834	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R3841,42	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R3844	ERJ2GEJ104	M.RESISTOR CH 1/16W 100K	1	
R3845	ERJ2GEJ270	M.RESISTOR CH 1/16W 27	1	
R4001,02	ERJ2RHD273	M.RESISTOR CH 1/16W 27K	2	
R4003,04	ERJ2RHD822	M.RESISTOR CH 1/16W 8.2K	2	
R4011,12	ERJ2RHD103	M.RESISTOR CH 1/16W 10K	2	
R4013,14	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	2	
R4015,16	ERJ2GEJ273	M.RESISTOR CH 1/16W 27K	2	
R4017,18	ERJ2GEJ101	M.RESISTOR CH 1/16W 100	2	
R4021	ERJ2GEJ124	M.RESISTOR CH 1/16W 120K	1	
R4022	ERJ2GEJ681	M.RESISTOR CH 1/16W 680	1	
R4201,02	ERJ2GEJ682	M.RESISTOR CH 1/16W 6.8K	2	
R4203,04	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	2	
R4205	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R4211	ERJ2GEJ473	M.RESISTOR CH 1/16W 47K	1	
R4501	ERJ2GEJ100	M.RESISTOR CH 1/16W 10	1	
R4502,03	ERJ2RHD471	M.RESISTOR CH 1/16W 470	2	
R4504	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R4506,07	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	2	
R4701	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R4702	ERJ2RHD223	M.RESISTOR CH 1/16W 22K	1	
R4704	ERJ2GEJ392	M.RESISTOR CH 1/16W 3.9K	1	
R4705	ERJ2GEJ331	M.RESISTOR CH 1/16W 330	1	
R4707	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R4708	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R4709	ERJ2GEJ102	M.RESISTOR CH 1/16W 1K	1	
R4710	ERJ2GEJ223	M.RESISTOR CH 1/16W 22K	1	
R4711,12	ERJ2GEJ182	M.RESISTOR CH 1/16W 1.8K	2	
R4798	ERJ2GEJ154	M.RESISTOR CH 1/16W 150K	1	
R4799	ERJ2GEJ563	M.RESISTOR CH 1/16W 56K	1	
R6501	ERJ2GEJ222	M.RESISTOR CH 1/16W 2.2K	1	
R6502	ERJ2GEJ103	M.RESISTOR CH 1/16W 10K	1	
R6503	ERJ3GEY0R00	M.RESISTOR CH 1/3W 0	1	
R6505,06	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	2	
R6510	ERJ2GE0R00	M.RESISTOR CH 1/16W 0	1	
R6515	ERJ2GEJ472	M.RESISTOR CH 1/16W 4.7K	1	
RA2001	EXB28V102J	RESISTOR-RESISTOR	1	
RA2002	EXB24V102J	RESISTOR-RESISTOR	1	
RA2003	EXB28V473J	RESISTOR-RESISTOR	1	
RA2005-08	EXB28V103J	RESISTOR-RESISTOR	4	
RA2011	EXB24V102J	RESISTOR-RESISTOR	1	
RA2012	EXB28V473J	RESISTOR-RESISTOR	1	
RA2013	EXB24V331J	RESISTOR-RESISTOR	1	
RA2014	EXB24V271J	RESISTOR-RESISTOR	1	
RA2016	EXB24V102J	RESISTOR-RESISTOR	1	
RA2018	EXB24V332J	RESISTOR-RESISTOR	1	
RA2023	EXB28V102J	RESISTOR-RESISTOR	1	
RA2024	EXB24V472J	RESISTOR-RESISTOR	1	
RA3803-05	EXB24V103J	RESISTOR-RESISTOR	3	
RA3806,07	EXB28V103J	RESISTOR-RESISTOR	2	
RA3808,09	EXB24V103J	RESISTOR-RESISTOR	2	
RA4001	EXB24V562J	RESISTOR-RESISTOR	1	
X2001	VSX0847	CRYSTAL OSCILLATOR	1	
X2002	VSX0885	CRYSTAL OSCILLATOR	1	
X2003	VSX0872	CRYSTAL OSCILLATOR	1	
X3001	VSX0848	CRYSTAL OSCILLATOR	1	
X3003	VSX0846	CRYSTAL OSCILLATOR	1	
		MISCELLANEOUS		
	VWJ13G8045AA	FLAT CARD CABLE	1	
	VWJ16G8050AA	FLAT CARD CABLE	1	
	VGQ4644	BARRIER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP23450A	CAMERA C. B. A.		(RTL)
C101	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C102	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	
C201	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C202	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C204	ECST1CD686Z	T. CAPACITOR CH 16V 68U	1	
C205, 06	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	2	
C207	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C208	ECUX1H070CCQ	C. CAPACITOR CH 50V 7P	1	
C209	ECUX1H060CCQ	C. CAPACITOR CH 50V 6P	1	
C210	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	
C211	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C212	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C213	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C214	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	
C216	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C217	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C218	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C219, 20	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	2	
C221	ECST0JC107Z	T. CAPACITOR CH 6. 3V 100U	1	
C222	ECUX1H220JCQ	C. CAPACITOR CH 50V 22P	1	
C223	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C225	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C226	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C227	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C229	ECST1VX225Z	T. CAPACITOR CH 35V 2. 2U	1	
C230	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C231	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C232	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	
C233	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C235	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C236	ECUX1H120JCQ	C. CAPACITOR CH 50V 12P	1	
C237	ECUX1H060CCQ	C. CAPACITOR CH 50V 6P	1	
C239	ECUX1A105ZFV	C. CAPACITOR CH 10V 1U	1	
C250	ECUX1H101JCV	C. CAPACITOR CH 50V 100P	1	
C301	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C302	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C303-05	EEJK0JS106	E. CAPACITOR 6. 3V 10U	3	
C307-09	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	3	
C310	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C311	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C312	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C313	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C314	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C315	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C316	ECUX1H270JCQ	C. CAPACITOR CH 50V 27P	1	
C317	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C318	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C319, 20	EEJK0JS106	E. CAPACITOR 6. 3V 10U	2	
C321, 22	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	2	
C323	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C324	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C325	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C326	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C327	EEJK0JS106	E. CAPACITOR 6. 3V 10U	1	
C328	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C329	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C330	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C331	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C332	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C333	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C334	ECUM1C224KBN	C. CAPACITOR CH 16V 0. 22U	1	
C335	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C336, 37	ECUX1H220JCQ	C. CAPACITOR CH 50V 22P	2	
C338	VCS0JJ106	E. CAPACITOR 6. 3V 10U	1	
C339	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C452	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	1	
C453	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C454	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C455	ECST0JX476Z	T. CAPACITOR CH 6. 3V 47U	1	
C701	ECUX1E332KBQ	C. CAPACITOR CH 25V 3300P	1	
C702	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C703	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C704	ECUX1A105ZFV	C. CAPACITOR CH 10V 1U	1	
C705	ECUX1C103KBQ	C. CAPACITOR CH 16V 0. 01U	1	
C706	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C707	ECUX1E223KBV	C. CAPACITOR CH 25V 0. 022U	1	
C708	ECUX1E392KBQ	C. CAPACITOR CH 25V 3900P	1	
C709	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C711	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C712	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C713	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C714	ECUX1C822KBQ	C. CAPACITOR CH 16V 8200P	1	
C715	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0. 1U	1	
C716	ECUM1C224KBN	C. CAPACITOR CH 16V 0. 22U	1	
C717	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C718	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C719	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C720	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C721	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C722	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C724	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C725	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
D204, 05	1SS355	DIODE	2	
D301	MA728	DIODE	1	
D302	1SS355	DIODE	1	
D303-05	MA728	DIODE	3	
FL201	VLF1386	FILTER	1	
FL202	VLF1388	FILTER	1	
FP701	VJS3320B020	CONNECTOR (FEMALE) 20P	1	
IC101	RN5RG46AATRS	IC	1	
IC201	MN31121SA	IC	1	
IC202	MN5245	IC	1	
IC203	AN2108NFHQ	IC	1	
IC204	TC7SH04FU	IC	1	
IC205	TC7SHU04FU	IC	1	
IC207	TC7SH08FU	IC	1	
IC210	TC7SH08FU	IC	1	
IC301	————	IC	1	
IC302	D703002GC035	IC	1	
IC303	TDA8766	IC	1	
IC304	ZA4035W	IC	1	
IC305	MN155402M9P	IC	1	
IC306	TA75W01FU	IC	1	
IC308	AK6480AF	IC	1	
IC309	TC7SH08FU	IC	1	
IC313, 14	TC7SH08FU	IC	2	
IC317	TC7SH08FU	IC	1	
IC319	TC7SH08FU	IC	1	
IC457	TA75S393F	IC	1	
IC702	TA8487F	IC	1	
IC703	TB6526F	IC	1	
IC704	NJM2115VA	IC	1	
IC705	TA75W01FU	IC	1	
IC706, 07	NJM2115VA	IC	2	
L101	VLQ0807K100	COIL 10UH	1	
L201	VLQ0808J100	COIL 10UH	1	
L202	VLQ0807K100	COIL 10UH	1	
L204	VLQ0807K100	COIL 10UH	1	
L205	VLQ0808J1R5	COIL 1. 5UH	1	
L208	VLQ0807K100	COIL 10UH	1	
L210	VLQ0807K100	COIL 10UH	1	
L211	VLQ0426J270	COIL 27UH	1	
L214	VLQ0779K100	COIL 10UH	1	
L301-03	VLQ0807K100	COIL 10UH	3	
L304	VLQ0808J6R8	COIL 6. 8UH	1	
L305-15	VLQ0807K100	COIL 10UH	11	
L318, 19	VLQ0807K100	COIL 10UH	2	
L701, 02	VLQ0807K100	COIL 10UH	2	
L703	VLQ0779K470	COIL 47UH	1	
L704, 05	VLQ0807K100	COIL 10UH	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
LB201,02	VLP0329A601	COIL	2	
LB301,02	VLP0329A601	COIL	2	
LB303	VLP0154	COIL	1	
LB304	VLP0175	COIL	1	
LB305,06	VLP0329A601	COIL	2	
PP201	VJP3358C012	CONNECTOR (MALE) 12P	1	
PP301	VJP3884B080	CONNECTOR (MALE) 8P	1	
PP302	VJP3847D030	CONNECTOR (MALE) 3P	1	
Q101	2SB1073	TRANSISTOR	1	
Q201	XP4601	TRANSISTOR-TRANSISTOR	1	
Q202	2SD2216	TRANSISTOR	1	
Q203	2SB1462-R	TRANSISTOR	1	
Q302	2SB970X	TRANSISTOR	1	
Q303	2SD2216	TRANSISTOR	1	
Q304	2SB970X	TRANSISTOR	1	
Q451	2SD1030	TRANSISTOR	1	
Q701-03	XN4404	TRANSISTOR	3	
Q704	2SD601A	TRANSISTOR	1	
Q706	XP4501	TRANSISTOR-TRANSISTOR	1	
Q707	2SB1073	TRANSISTOR	1	
QR101	MRN1102	TRANSISTOR-RESISTOR	1	
QR302	MRN1102	TRANSISTOR-RESISTOR	1	
QR303	XP1211	TRANSISTOR-RESISTOR	1	
QR304	MRN1104	TRANSISTOR-RESISTOR	1	
QR305,06	XP1211	TRANSISTOR-RESISTOR	2	
QR310	MRN1102	TRANSISTOR-RESISTOR	1	
QR701	MRN1102	TRANSISTOR-RESISTOR	1	
R101	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R102	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R103	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R201,02	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	2	
R203	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R204	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R206	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R207	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R208	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	1	
R209	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R210	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R211	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R213	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R214	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R216	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R217	ERJ2GEJ823	M. RESISTOR CH 1/16W 82K	1	
R218	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R221	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R222	ERJ2GEJ561	M. RESISTOR CH 1/16W 560	1	
R223	ERJ2GEJ121	M. RESISTOR CH 1/16W 120	1	
R224	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R225	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	1	
R226	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R228	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R229	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R230	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R231	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R232	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R233	ERJ2GEJ561	M. RESISTOR CH 1/16W 560	1	
R237	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R238	ERJ2GEJ562	M. RESISTOR CH 1/16W 5.6K	1	
R239	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R241	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R243	ERJ2GEJ272	M. RESISTOR CH 1/16W 2.7K	1	
R244	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R248-50	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	3	
R251,52	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	2	
R301	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R302	ERJ6RBB152	M. RESISTOR CH 1/10W 1.5K	1	
R304	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R305,06	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R307	ERJ2GEJ183	M. RESISTOR CH 1/16W 18K	1	
R308	ERJ2GEJ823	M. RESISTOR CH 1/16W 82K	1	
R309	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R310	ERJ2GEJ100	M. RESISTOR CH 1/16W 10	1	
R311	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R312	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R313-15	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	3	
R316	ERJ2RHD183	M. RESISTOR CH 1/16W 18K	1	
R317	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R318	ERJ2GEJ393	M. RESISTOR CH 1/16W 39K	1	
R319	ERJ2RHD303	M. RESISTOR CH 1/16W 30K	1	
R320	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R321	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R322	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R323	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R324	ERJ2GEJ272	M. RESISTOR CH 1/16W 2.7K	1	
R325	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R326	ERJ2GEJ682	M. RESISTOR CH 1/16W 6.8K	1	
R327,28	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R329,30	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	2	
R331	ERJ2GEJ332	M. RESISTOR CH 1/16W 3.3K	1	
R332	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R333	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R334	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R335	ERJ2GEJ681	M. RESISTOR CH 1/16W 680	1	
R336	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R337	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R338	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R339	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R340	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R341	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R342	ERJ2GEJ821	M. RESISTOR CH 1/16W 820	1	
R343,44	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R345	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R346	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R348	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R351	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R352	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R353	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R354-57	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	4	
R358	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R359	ERJ2GEJ332	M. RESISTOR CH 1/16W 3.3K	1	
R366	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R372	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R375	ERJ2GEJ182	M. RESISTOR CH 1/16W 1.8K	1	
R376	ERJ2GEJ822	M. RESISTOR CH 1/16W 8.2K	1	
R377	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R378	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R379	ERJ6RBB152	M. RESISTOR CH 1/10W 1.5K	1	
R380	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R381	ERJ6RBB152	M. RESISTOR CH 1/10W 1.5K	1	
R382	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R383	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R385	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R386	ERJ2GEJ391	M. RESISTOR CH 1/16W 390	1	
R387	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R393	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R451	ERJ3GEYJ335	M. RESISTOR CH 1/16W 3.3M	1	
R452	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R453	ERJ2RHD113	M. RESISTOR CH 1/16W 11K	1	
R454	ERJ2RHD183	M. RESISTOR CH 1/16W 18K	1	
R701,02	ERJ3GEYJ3R3	M. RESISTOR CH 1/16W 3.3	2	
R703	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R704	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R705-07	ERJ2GEJ272	M. RESISTOR CH 1/16W 2.7K	3	
R708.09	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R710	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R711	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	1	
R712	ERJ3RED124	M. RESISTOR CH 1/16W 120K	1	
R713,14	ERJ2RHD472	M. RESISTOR CH 1/16W 4.7K	2	
R715	ERJ3RED124	M. RESISTOR CH 1/16W 120K	1	
R716	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R717,18	ERJ6RBB472	M. RESISTOR CH 1/10W 4.7K	2	
R719,20	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	2	
R721	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	1	
R722	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R723	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	1	
R724	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R725	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R726	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R727	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R728	ERJ2GEJ124	M. RESISTOR CH 1/16W 120K	1	
R729	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R730	ERJ2GEJ393	M. RESISTOR CH 1/16W 39K	1	
R731	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R732	ERJ2GEJ153	M. RESISTOR CH 1/16W 15K	1	
R733, 34	ERJ2GEJ684	M. RESISTOR CH 1/16W 680K	2	
R735, 36	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	2	
R737	ERJ2GEJ474	M. RESISTOR CH 1/16W 470K	1	
R738	ERJ2GEJ333	M. RESISTOR CH 1/16W 33K	1	
R740	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R741	ERJ2GEJ183	M. RESISTOR CH 1/16W 18K	1	
R742	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R743, 44	ERJ2RHD153	M. RESISTOR CH 1/16W 15K	2	
R745	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
R746	ERJ6RQF1R8	M. RESISTOR CH 1/10W 1. 8	1	
R747	ERJ2GEJ221	M. RESISTOR CH 1/16W 220	1	
R748	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R749	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R750	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	
R751	ERJ2GEJ222	M. RESISTOR CH 1/16W 2. 2K	1	
R752	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R753	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R754, 55	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R757	ERJ2GEJ472	M. RESISTOR CH 1/16W 4. 7K	1	
R758	ERJ2GEJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R761	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R762	ERJ2GEJ682	M. RESISTOR CH 1/16W 6. 8K	1	
RA302, 03	EXB24V473J	RESISTOR-RESISTOR	2	
RA304	EXBV8V101J	RESISTOR-RESISTOR	1	
RA305	EXB24V473J	RESISTOR-RESISTOR	1	
RA306	EXBV8V101J	RESISTOR-RESISTOR	1	
RA307	EXB24V101J	RESISTOR-RESISTOR	1	
X201	VSX0895	CRYSTAL OSCILLATOR	1	
X301	VSX0869	CRYSTAL OSCILLATOR	1	
X302	VSX0865	CRYSTAL OSCILLATOR	1	
■	VEP01801A-5	POWER C. B. A.		(RTL)
C1001	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1002	ECGC1BB150	E. CAPACITOR CH 12. 5V 15U	1	
C1003, 04	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	2	
C1009	ECUM1E104KBN	C. CAPACITOR CH 25V 0. 1U	1	
C1011	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1012	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1013	ECUX1E331KBQ	C. CAPACITOR CH 25V 330P	1	
C1014	ECUX1E223KBV	C. CAPACITOR CH 25V 0. 022U	1	
C1015	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1016-19	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	4	
C1021	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1022	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1023	ECUX1E331KBQ	C. CAPACITOR CH 25V 330P	1	
C1024	ECUX1E223KBV	C. CAPACITOR CH 25V 0. 022U	1	
C1025	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1026-29	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	4	
C1031	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1032	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1033	ECUX1E392KBQ	C. CAPACITOR CH 25V 3900P	1	
C1034	ECUX1H103KBV	C. CAPACITOR CH 50V 0. 01U	1	
C1035	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1036	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1041	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1042	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1044	ECUX1E223KBV	C. CAPACITOR CH 25V 0. 022U	1	
C1045	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1046, 47	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	2	
C1051	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C1052	ECUM1E105KBM	C. CAPACITOR CH 25V 1U	1	
C1053	ECUX1E222KBQ	C. CAPACITOR CH 25V 2200P	1	
C1055	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1056	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1058	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C1059	ECUM1A335KBM	C. CAPACITOR CH 10V 3. 3U	1	
C1061	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C1062	ECUX1E332KBQ	C. CAPACITOR CH 25V 3300P	1	
C1063, 64	ECUM1A225KBM	C. CAPACITOR CH 10V 2. 2U	2	
C1065, 66	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	2	
C1101	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	1	
C1102	ECUM1C334KBN	C. CAPACITOR CH 16V 0. 33U	1	
C1103	ECUX1C473KBV	C. CAPACITOR CH 16V 0. 047U	1	
C1104	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1105	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1106	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C1107	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1111	ECUX1H471JCV	C. CAPACITOR CH 50V 470P	1	
C1112	ECUX1E471KBQ	C. CAPACITOR CH 25V 470P	1	
C1113	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C1114	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C1117	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1118	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1119	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C1121	ECUX1H822KBV	C. CAPACITOR CH 50V 8200P	1	
C1122	ECUX1C822KBQ	C. CAPACITOR CH 16V 8200P	1	
C1123	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C1124	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C1128, 29	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	2	
C1131	ECUX1H471JCV	C. CAPACITOR CH 50V 470P	1	
C1132	ECUX1E222KBQ	C. CAPACITOR CH 25V 2200P	1	
C1133	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C1134	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C1141	ECUM1C224KBN	C. CAPACITOR CH 16V 0. 22U	1	
C1142	ECUX1H822KBV	C. CAPACITOR CH 50V 8200P	1	
C1143	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C1144	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C1151	ECUX1H822KBV	C. CAPACITOR CH 50V 8200P	1	
C1152	ECUX1C822KBQ	C. CAPACITOR CH 16V 8200P	1	
C1153	ECUX1H151JCQ	C. CAPACITOR CH 50V 150P	1	
C1154	ECUX1H390JCQ	C. CAPACITOR CH 50V 39P	1	
C1155	ECST1AY225Z	T. CAPACITOR CH 10V 2. 2U	1	
C1156	ECST1AY106Z	T. CAPACITOR CH 10V 10U	1	
C1251	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
D1051, 52	MA729	DIODE	2	
D1061, 62	MA728	DIODE	2	
D1101	MA8120-L	DIODE	1	
D1102	MA728	DIODE	1	
D1103	1SS355	DIODE	1	
D1151	MA8160-M	DIODE	1	
D1152	1SS355	DIODE	1	
FP1001	VJS3320B014	CONNECTOR (FEMALE) 14P	1	
IC1001	BA9734AKV	IC	1	
IC1002	TA75S393F	IC	1	
⚠ IP1001	VSF0233F31	FUSE	1	
L1001	ELC5SB3R9M	CHOKE COIL	1	
L1011	ELL6TR560M	CHOKE COIL	1	
L1012	VLQ0810M4R7	COIL 4. 7UH	1	
L1013	VLQ0779K100	COIL 10UH	1	
L1014	VLQ0780K100	COIL 10UH	1	
L1015-17	VLQ0779K100	COIL 10UH	3	
L1021	ELL6TR150M	CHOKE COIL	1	
L1022	VLQ0810M4R7	COIL 4. 7UH	1	
L1023	VLQ0779M4R7	COIL 4. 7UH	1	
L1024	VLQ0779K100	COIL 10UH	1	
L1025	VLQ0780K100	COIL 10UH	1	
L1026	VLQ0779K100	COIL 10UH	1	
L1029	VLQ0779K100	COIL 10UH	1	
L1031	ELL6TR151M	CHOKE COIL	1	
L1032	VLQ0810M4R7	COIL 4. 7UH	1	
L1041	ELL6TR330M	CHOKE COIL	1	
L1042	VLQ0810M4R7	COIL 4. 7UH	1	
L1043	VLQ0780K100	COIL 10UH	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L1051, 52	VLQ0779K331	COIL 330UH	2	
L1054	VLQ0779K100	COIL 10UH	1	
L1061	ELL6TRD003	CHOKE COIL	1	
L1062	ELL6TRD004	CHOKE COIL	1	
PP1001	VJP3884B080	CONNECTOR (MALE) 8P	1	
Q1011	FP102	TRANSISTOR	1	
Q1021	FP102	TRANSISTOR	1	
Q1022	2SK2151	TRANSISTOR	1	
Q1031	FP102	TRANSISTOR	1	
Q1041	FP102	TRANSISTOR	1	
Q1042	2SK2151	TRANSISTOR	1	
Q1051	2SA1731-R	TRANSISTOR	1	
Q1052	2SB970X	TRANSISTOR	1	
Q1053	2SD2216	TRANSISTOR	1	
Q1054	XP1401	TRANSISTOR	1	
Q1055	2SD2216	TRANSISTOR	1	
Q1056	2SB1462-R	TRANSISTOR	1	
Q1061, 62	FP102	TRANSISTOR	2	
Q1101	2SB1462-R	TRANSISTOR	1	
QR1001	UN2130X	TRANSISTOR-RESISTOR	1	
QR1002	UN921F	TRANSISTOR-RESISTOR	1	
QR1003	MRN1104	TRANSISTOR-RESISTOR	1	
QR1004	MRN2111	TRANSISTOR-RESISTOR	1	
QR1055	MRN1104	TRANSISTOR-RESISTOR	1	
QR1101	MRN1107	TRANSISTOR-RESISTOR	1	
R1001	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R1003, 04	ERJ2GEJ225	M. RESISTOR CH 1/16W 2.2M	2	
R1005	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R1007	ERJ8GEY0R00	M. RESISTOR CH 1/8W 0	1	
R1008	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R1009	ERJ8GEY0R00	M. RESISTOR CH 1/8W 0	1	
R1010	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1011	ERJ6RBB682	M. RESISTOR CH 1/10W 6.8K	1	
R1012	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1013	ERJ3RBD361	M. RESISTOR CH 1/16W 360	1	
R1014	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1015	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R1020	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1021	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1022	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1023	ERJ3RBD331	M. RESISTOR CH 1/16W 330	1	
R1024	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1025	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R1030	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1031	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1032	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1033	ERJ3RED220	M. RESISTOR CH 1/16W 22	1	
R1034	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1035	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R1040	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1041	ERJ6RBB152	M. RESISTOR CH 1/10W 1.5K	1	
R1042	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1043	ERJ3RBD301	M. RESISTOR CH 1/16W 300	1	
R1044	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1045	ERJ2GEJ331	M. RESISTOR CH 1/16W 330	1	
R1050	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1051	ERJ6RBB273	M. RESISTOR CH 1/10W 27K	1	
R1052	ERJ3RED820	M. RESISTOR CH 1/16W 82	1	
R1053	ERJ3RBD301	M. RESISTOR CH 1/16W 300	1	
R1054	ERJ6RBB272	M. RESISTOR CH 1/10W 2.7K	1	
R1056	ERJ2GEJ470	M. RESISTOR CH 1/16W 47	1	
R1057	ERJ2RHD133	M. RESISTOR CH 1/16W 13K	1	
R1058	ERJ2RHD121	M. RESISTOR CH 1/16W 120	1	
R1059	ERJ2RHD272	M. RESISTOR CH 1/16W 2.7K	1	
R1061, 62	ERJ2GEJ122	M. RESISTOR CH 1/16W 1.2K	2	
R1081	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R1101	ERJ3RBD223	M. RESISTOR CH 1/16W 22K	1	
R1102	ERJ6GEYF472	M. RESISTOR CH 1/10W 4.7K	1	
R1103	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	1	
R1104	ERJ2GEJ123	M. RESISTOR CH 1/16W 12K	1	
R1105	ERJ2GEJ563	M. RESISTOR CH 1/16W 56K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1106	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R1107	ERJ2GEJ225	M. RESISTOR CH 1/16W 2.2M	1	
R1108	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	1	
R1109	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R1111	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R1112	ERJ2GEJ822	M. RESISTOR CH 1/16W 8.2K	1	
R1121	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R1122	ERJ2GEJ682	M. RESISTOR CH 1/16W 6.8K	1	
R1131	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R1132	ERJ2GEJ682	M. RESISTOR CH 1/16W 6.8K	1	
R1136	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R1141	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R1142	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R1150	ERJ8GEYJ680	M. RESISTOR CH 1/8W 68	1	
R1151	ERJ2GEJ151	M. RESISTOR CH 1/16W 150	1	
R1152	ERJ2GEJ682	M. RESISTOR CH 1/16W 6.8K	1	
R1153	ERJ2RHD123	M. RESISTOR CH 1/16W 12K	1	
R1154	ERJ2RHD473	M. RESISTOR CH 1/16W 47K	1	
R1155	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R1156	ERJ2GEJ332	M. RESISTOR CH 1/16W 3.3K	1	
R1157	ERJ2GEJ272	M. RESISTOR CH 1/16W 2.7K	1	
R1158, 59	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	2	
R1178, 79	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	2	
R1253-56	ERJ2GEJ473	M. RESISTOR CH 1/16W 47K	4	
T1001	VTP0499	TRANSFORMER	1	
■	VEP02561A	DRIVE C.B.A.		(RTL)
C2201	ECUX1E273KBV	C. CAPACITOR CH 25V 0.027U	1	
C2202	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C2203	ECUX1H270JCQ	C. CAPACITOR CH 50V 27P	1	
C2204	ECUM1A564KBN	C. CAPACITOR CH 10V 0.56U	1	
C2205	ECUX1E332KBQ	C. CAPACITOR CH 25V 3300P	1	
C2207	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C2208	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C2209	ECUX1E223KBV	C. CAPACITOR CH 25V 0.022U	1	
C2210	ECUX1C473KBV	C. CAPACITOR CH 16V 0.047U	1	
C2211	ECST0JY475Z	T. CAPACITOR CH 6.3V 4.7U	1	
C2212-14	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	3	
C2215	ECUM0J335KBN	C. CAPACITOR CH 6.3V 3.3U	1	
C2217-19	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	3	
C2223	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2225	ECUM0J335KBN	C. CAPACITOR CH 6.3V 3.3U	1	
C2226, 27	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C2230	ECUM0J335KBN	C. CAPACITOR CH 6.3V 3.3U	1	
C2231	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2232	ECUM0J335KBN	C. CAPACITOR CH 6.3V 3.3U	1	
C2233	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C2234	ECUX1H101JCQ	C. CAPACITOR CH 50V 100P	1	
C2235-37	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	3	
C2238, 39	ECUM0J335KBN	C. CAPACITOR CH 6.3V 3.3U	2	
C2240	ECUX1H150JCQ	C. CAPACITOR CH 50V 15P	1	
C2245	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C2246	ECUM1A564KBN	C. CAPACITOR CH 10V 0.56U	1	
C2247-49	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	3	
C2250	ECST0JX476Z	T. CAPACITOR CH 6.3V 47U	1	
C2251	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C2255-57	ECUX1C104ZFQ	C. CAPACITOR CH 16V 0.1U	3	
FP2002	VJS3319B022	CONNECTOR (FEMALE) 22P	1	
FP2003	VJS3319B009	CONNECTOR (FEMALE) 9P	1	
FP2004	VJS3320B030	CONNECTOR (FEMALE) 30P	1	
IC2201	TB6519AF	IC	1	
IC2202, 03	MDC05TR	IC	2	
IC2204	TA75S393F	IC	1	
IC2205	TC75W54FU	IC	1	
IC2206	TC7S86FU	IC	1	
IC2207	BA6289F	IC	1	
PS2001	VJS3989C050	CONNECTOR (FEMALE) 50P	1	
Q2201	2SB1462-R	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q2202	2SD2216	TRANSISTOR	1	
R2201	ERJ2GEJ682	M. RESISTOR CH 1/16W 6.8K	1	
R2202	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2204	ERJ2GEJ224	M. RESISTOR CH 1/16W 220K	1	
R2205	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2207	ERJ2GEJ561	M. RESISTOR CH 1/16W 560	1	
R2208	ERJ8GEYJR33	M. RESISTOR CH 1/8W 0.33	1	
R2209	ERJ8GEYJR47	M. RESISTOR CH 1/8W 0.47	1	
R2210, 11	ERJ2GEJ472	M. RESISTOR CH 1/16W 4.7K	2	
R2212	ERJ8RQJR27	M. RESISTOR CH 1/8W 0.27	1	
R2213	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2214	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R2215, 16	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	2	
R2220	ERJ2RHD104	M. RESISTOR CH 1/16W 100K	1	
R2221	ERJ2RHD431	M. RESISTOR CH 1/16W 430	1	
R2222, 23	ERJ2GEJ223	M. RESISTOR CH 1/16W 22K	2	
R2224	ERJ2GEJ182	M. RESISTOR CH 1/16W 1.8K	1	
R2225	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2226	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2227	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R2228	ERJ2GEJ105	M. RESISTOR CH 1/16W 1M	1	
R2229	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R2231	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R2232	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R2233	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
R2234	ERJ2GEJ394	M. RESISTOR CH 1/16W 390K	1	
R2235	ERJ2GEJ104	M. RESISTOR CH 1/16W 100K	1	
R2236	ERJ2GEJ273	M. RESISTOR CH 1/16W 27K	1	
R2237	ERJ2GEJ222	M. RESISTOR CH 1/16W 2.2K	1	
R2238	ERJ2GEJ122	M. RESISTOR CH 1/16W 1.2K	1	
RA2201	EXBV8V331J	RESISTOR-RESISTOR	1	
RA2203	EXBV4V102J	RESISTOR-RESISTOR	1	
		MISCELLANEOUS		
	VMZ2689	INSULATION SHEET	1	
■	VEP00Y65A	LCD/IF C.B.A.		(RTL)
C3501	ECST0JD107Z	T. CAPACITOR CH 6.3V 100U	1	
C3503	ECST0JD107Z	T. CAPACITOR CH 6.3V 100U	1	
FP3501	VJS3320B018	CONNECTOR (FEMALE) 18P	1	
FP3502, 03	VJS3320B016	CONNECTOR (FEMALE) 16P	2	
LB3501-04	VLP0157	COIL	4	
LB3505-07	VLP0155	COIL	3	
LB3508, 09	VLF1143A102	COIL 1000UH	2	
LB3510-14	VLP0157	COIL	5	
PS3501	VJS3636	SOCKET	1	
PS3502	VJS3989C070	CONNECTOR (FEMALE) 70P	1	
R3501, 02	ERJ3GEYJ750	M. RESISTOR CH 1/16W 75	2	
■	VYK7917	TOP OPERATION C.B.A.		
S6801-04	EVQQW101M	SWITCH	4	
		MISCELLANEOUS		
	VSR0224	MULTI FUNCTION DIAL	1	
■	VEP28240C	E.V.F. (A) C.B.A.		(RTL)
BL881	VLL0204	FLUORESCENT LAMP	1	
Q881	2SK1299-3S	TRANSISTOR	1	
R881	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
T881	ETJ09K31AM	TRANSFORMER	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP28244A	E.V.F. (B) C.B.A.		(RTL)
C801	ECUM1A335KBP	C. CAPACITOR CH 10V 33U	1	
C802	ECGC1BB150	E. CAPACITOR CH 12.5V 15U	1	
C827	ECUX1H102KBV	C. CAPACITOR CH 50V 1000P	1	
C829	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C830	ECUX1H470JCV	C. CAPACITOR CH 50V 47P	1	
C832	ECUX1H472KBV	C. CAPACITOR CH 50V 4700P	1	
C833	ECST1CY225Z	T. CAPACITOR CH 16V 2.2U	1	
C834-37	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	4	
C838, 39	ECST0JY106Z	T. CAPACITOR CH 6.3V 10U	2	
C865, 66	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	2	
D801	MA338	DIODE	1	
D803	1SS355	DIODE	1	
FP801	VJS3319B018	CONNECTOR (FEMALE) 18P	1	
FP802	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
IC802	ET2070F0A	IC	1	
IC805	TA75S558F	IC	1	
L801	VLQ0426J6R8	COIL 6.8UH	1	
L803-05	VLQ0807K100	COIL 10UH	3	
L881	VLQ0779K100	COIL 10UH	1	
R802	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R805	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R807, 08	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	2	
R832	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R834	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R835	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R836	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R841	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R849	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R850	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R851	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R852	ERJ3GEYG682	M. RESISTOR CH 1/16W 6.8K	1	
R878, 79	ERJ3RBD183	M. RESISTOR CH 1/16W 18K	2	
R880	ERJ3RBD332	M. RESISTOR CH 1/16W 3.3K	1	
■	VEP26196B	MONITOR C.B.A.		(RTL) NV-DS5EG/B/EN
C901-03	ECUX1H471JCV	C. CAPACITOR CH 50V 470P	3	
C904-06	ECUM1A335KBM	C. CAPACITOR CH 10V 3.3U	3	
C907	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	1	
C908	ECST0JY106Z	T. CAPACITOR CH 6.3V 10U	1	
C909	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C910	ECUX1H103KBV	C. CAPACITOR CH 50V 0.01U	1	
C911	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C912	ECST0JY106Z	T. CAPACITOR CH 6.3V 10U	1	
C913	ECUX1H121JCV	C. CAPACITOR CH 50V 120P	1	
C914	ECUX1H102KBV	C. CAPACITOR CH 50V 1000P	1	
C915	ECST1CY225Z	T. CAPACITOR CH 16V 2.2U	1	
C916, 17	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	2	
C918	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C919	ECUM1C105KBM	C. CAPACITOR CH 16V 1U	1	
C920	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	1	
C921	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C922	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C926	ECUM1C104KBV	C. CAPACITOR CH 16V 0.1U	1	
C927, 28	ECUM1C225KBP	C. CAPACITOR CH 16V 2.2U	2	
C929	ECUX1H151JCV	C. CAPACITOR CH 50V 150P	1	
C930	ECUX1H102KBV	C. CAPACITOR CH 50V 1000P	1	
C931	ECST0JY106Z	T. CAPACITOR CH 6.3V 10U	1	
C932, 33	ECUM1C106KBP	C. CAPACITOR CH 16V 10U	2	
D901	MA338	DIODE	1	
D902	MA132WK	DIODE	1	
FP901	VJS3320B024	CONNECTOR (FEMALE) 24P	1	
FP902	VJS3320B008	CONNECTOR (FEMALE) 8P	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
FP903	VJS3319B016	CONNECTOR (FEMALE) 16P	1	
FP904	VJS3320B016	CONNECTOR (FEMALE) 16P	1	
FP905	VJS3320B006	CONNECTOR (FEMALE) 6P	1	
IC901	UPD65622GY85	IC	1	
IC902	TC4W53FU	IC	1	
IC903-05	TA75S558F	IC	3	
IC906	NJU7662M	IC	1	
IC907	NJM78L12UA	IC	1	
L901, 02	VLQ0807K220	COIL 22UH	2	
L903	VLQ0163J2R7	COIL 2. 7UH	1	
L904	VLQ0807K220	COIL 22UH	1	
L905, 06	VLQ0807K100	COIL 10UH	2	
Q902	2SD2216	TRANSISTOR	1	
Q903-08	XP4601	TRANSISTOR-TRANSISTOR	6	
Q909-12	2SD2216	TRANSISTOR	4	
QR902	MRN1104	TRANSISTOR-RESISTOR	1	
QR903	XP4312	TRANSISTOR-RESISTOR	1	
QR904	MRN2104	TRANSISTOR-RESISTOR	1	
QR905	XP4312	TRANSISTOR-RESISTOR	1	
R901-03	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	3	
R905	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R906-11	ERJ3GEYJ393	M. RESISTOR CH 1/16W 39K	6	
R912-14	ERJ3RBD104	M. RESISTOR CH 1/16W 100K	3	
R915-17	ERJ3RBD273	M. RESISTOR CH 1/16W 27K	3	
R918-20	ERJ3RBD152	M. RESISTOR CH 1/16W 1. 5K	3	
R921-23	ERJ3RBD472	M. RESISTOR CH 1/16W 4. 7K	3	
R924	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R925	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R926	ERJ3GEYJ101	M. RESISTOR CH 1/16W 100	1	
R927	ERJ3GEYJ474	M. RESISTOR CH 1/16W 470K	1	
R928	ERJ3GEYG332	M. RESISTOR CH 1/16W 3. 3K	1	
R929	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R930	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R931	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R932	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R933	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R934	ERJ3GEYG682	M. RESISTOR CH 1/16W 6. 8K	1	
R935	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R936	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R937	ERJ3GEYJ563	M. RESISTOR CH 1/16W 56K	1	
R938	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R939	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R940	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R941	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R942-44	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	3	
R945	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R946	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R947	ERJ3GEYJ184	M. RESISTOR CH 1/16W 180K	1	
R948	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R949	ERJ3GEYJ104	M. RESISTOR CH 1/16W 100K	1	
R950	ERJ3GEYJ473	M. RESISTOR CH 1/16W 47K	1	
R951	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R952	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R953	ERJ3GEYG682	M. RESISTOR CH 1/16W 6. 8K	1	
R954, 55	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	2	
R956	ERJ3GEYG682	M. RESISTOR CH 1/16W 6. 8K	1	
R957	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R958, 59	ERJ3GEYJ563	M. RESISTOR CH 1/16W 56K	2	
R960, 61	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	2	
R962	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R963	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R964	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R965	ERJ3GEYJ563	M. RESISTOR CH 1/16W 56K	1	
R967	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
■	VEP06C49A	SENSOR FLEX. CARD		(RTL)
				NV-DS5EG/B/EN
		MISCELLANEOUS		
	DN8797MS	HALL IC	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
■	VEP04674B	FRONT C. B. A.		(RTL)
C4801	ECUX1C333KBV	C. CAPACITOR CH 16V 0. 033U	1	
C4802	ECUM1E823KBN	C. CAPACITOR CH 25V 0. 082U	1	
C4804	ECUX1H561JCV	C. CAPACITOR CH 50V 560P	1	
C4805	ECUM1H473KBN	C. CAPACITOR CH 50V 0. 047U	1	
C4806	ECUX1C333KBV	C. CAPACITOR CH 16V 0. 033U	1	
C4807	ECUM1E823KBN	C. CAPACITOR CH 25V 0. 082U	1	
C4808	ECUX1H561JCV	C. CAPACITOR CH 50V 560P	1	
C4809	ECUM1H473KBN	C. CAPACITOR CH 50V 0. 047U	1	
C4814	ECUX1H822KBV	C. CAPACITOR CH 50V 8200P	1	
C4816	ECUX1H822KBV	C. CAPACITOR CH 50V 8200P	1	
C4817	ECST0JX226Z	T. CAPACITOR CH 6. 3V 22U	1	
C4830	ECST0JX226Z	T. CAPACITOR CH 6. 3V 22U	1	
C4901, 02	ECUX1H222KBV	C. CAPACITOR CH 50V 2200P	2	
C4903	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C4905	ECST0JX226Z	T. CAPACITOR CH 6. 3V 22U	1	
C4908	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C4910, 11	ECST0JX226Z	T. CAPACITOR CH 6. 3V 22U	2	
C4914	ECUM1C823KBV	C. CAPACITOR CH 16V 0. 082U	1	
C4916	ECUM1C823KBV	C. CAPACITOR CH 16V 0. 082U	1	
C6401	ECUM1C104KBV	C. CAPACITOR CH 16V 0. 1U	1	
C6402	ECST0JY106Z	T. CAPACITOR CH 6. 3V 10U	1	
D6801	CL150UR	DIODE	1	
D6802	PH310	DIODE	1	
FL4901	VLF1339B306	FILTER	1	
FL4902	VLF1341B306	FILTER	1	
FP4801	VJS3452A013	CONNECTOR (FEMALE) 13P	1	
IC4801	NJM2112V	IC	1	
IR6401	VEK8057	SENSOR	1	
JK4801	VJJ0414	MIC JACK	1	
Q4805	2SD2216	TRANSISTOR	1	
Q4810, 11	2SD2216	TRANSISTOR	2	
Q4901	2SD2216	TRANSISTOR	1	
Q4902	2SB1462	TRANSISTOR	1	
Q4903	2SD2216	TRANSISTOR	1	
Q4904	2SB1462	TRANSISTOR	1	
Q4905	2SD2216	TRANSISTOR	1	
QR4903, 04	MRN1103	TRANSISTOR-RESISTOR	2	
R4801-03	ERJ6GEYG392	M. RESISTOR CH 1/10W 3. 9K	3	
R4805	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R4806	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R4807	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R4808	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R4809-12	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	4	
R4814	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R4815, 16	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	2	
R4818	ERJ3GEYJ153	M. RESISTOR CH 1/16W 15K	1	
R4823	ERJ3GEYJ223	M. RESISTOR CH 1/16W 22K	1	
R4824	ERJ3GEYJ333	M. RESISTOR CH 1/16W 33K	1	
R4839	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R4861	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R4864	ERJ3GEYG472	M. RESISTOR CH 1/16W 4. 7K	1	
R4905	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R4906	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R4907	ERJ6GEYG154	M. RESISTOR CH 1/10W 150K	1	
R4908	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	1	
R4909	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R4910	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5. 6K	1	
R4911	ERJ3GEYJ181	M. RESISTOR CH 1/16W 180	1	
R4912	ERJ3GEYG471	M. RESISTOR CH 1/16W 470	1	
R4913	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R4914	ERJ6GEYG154	M. RESISTOR CH 1/10W 150K	1	
R4915	ERJ6GEYG563	M. RESISTOR CH 1/10W 56K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4916	ERJ3GEYG102	M. RESISTOR CH 1/16W 1K	1	
R4917	ERJ3GEYJ562	M. RESISTOR CH 1/16W 5.6K	1	
R4918	ERJ3GEYJ181	M. RESISTOR CH 1/16W 180	1	
R4919	ERJ3GEYG472	M. RESISTOR CH 1/16W 4.7K	1	
R4924	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R4925	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R4926	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R4928	ERJ3GEYG332	M. RESISTOR CH 1/16W 3.3K	1	
R4929	ERJ3GEYJ103	M. RESISTOR CH 1/16W 10K	1	
R4930	ERJ3GEYJ222	M. RESISTOR CH 1/16W 2.2K	1	
R4998	ERJ3GEY0R00	M. RESISTOR CH 1/16W 0	1	
R6803	ERJ6GEYG121	M. RESISTOR CH 1/10W 120	1	
		MISCELLANEOUS		
	VSC4648	MIC SHIELD COVER (A)	1	
	VSC4649	MIC SHIELD COVER (B)	1	
■	VEP06C16A	REAR OPERATION C.B.A.		(RTL)
B6701	VL2020/1HF	LITHIUM BATTERY	1	
D6701	CL150YG-CD	DIODE	1	
D6702	CL150UR	DIODE	1	
FP6701	VJS3320B016	CONNECTOR (FEMALE) 16P	1	
FP6702	VJS3320B005	CONNECTOR (FEMALE) 15P	1	
R6701	ERJ3GEYJ181	M. RESISTOR CH 1/16W 180	1	
S6701	ESE103119	SWITCH	1	
S6702	VMG0763	RUBBER SWITCH	1	
S6703	EVQPA501K	SWITCH	1	
S6704	ESD165236	SWITCH	1	
■	VEP05352A	HEAD AMP C.B.A.		(RTL)
C5001, 02	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C5004	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5007	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5010	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5013	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C5014	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C5015	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5016	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C5017	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5018	ECUX1H220JCQ	C. CAPACITOR CH 50V 22P	1	
C5019	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5020, 21	EEJK0JS106	E. CAPACITOR 6.3V 10U	2	
C5023, 24	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	2	
C5025	EEJK0JS106	E. CAPACITOR 6.3V 10U	1	
C5026	ECUX1E152KBQ	C. CAPACITOR CH 25V 1500P	1	
C5027	ECUX1H330JCQ	C. CAPACITOR CH 50V 33P	1	
C5028	ECUX1E122KBQ	C. CAPACITOR CH 25V 1200P	1	
C5029	ECUM1A105KBN	C. CAPACITOR CH 10V 1U	1	
C5030	ECUX1E102KBQ	C. CAPACITOR CH 25V 1000P	1	
C5031	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5032	ECUX1H470JCQ	C. CAPACITOR CH 50V 47P	1	
C5033	ECUX1E681KBQ	C. CAPACITOR CH 25V 680P	1	
C5034	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	1	
C5035-37	EEJK0JS106	E. CAPACITOR 6.3V 10U	3	
C5038-40	ECUX1C103KBQ	C. CAPACITOR CH 16V 0.01U	3	
FP5001	VJS3320B008	CONNECTOR (FEMALE) 8P	1	
IC5001	AN3731FHQ	IC	1	
L5002, 03	VLQ0808J220	COIL 22UH	2	
L5005	VLQ0807M4R7	COIL 4.7UH	1	
L5007	VLQ0807M4R7	COIL 4.7UH	1	
Q5002, 03	2SC3937	TRANSISTOR	2	
Q5005, 06	2SD1819A	TRANSISTOR	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R5002	ERJ2GEJ471	M. RESISTOR CH 1/16W 470	1	
R5003	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R5004	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R5005	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	1	
R5010	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R5012	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R5013	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R5014, 15	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	2	
R5016, 17	ERJ2GEJ102	M. RESISTOR CH 1/16W 1K	2	
R5018	ERJ2GEJ680	M. RESISTOR CH 1/16W 68	1	
R5019	ERJ3GEYJ123	M. RESISTOR CH 1/16W 12K	1	
R5020	ERJ3GEYG152	M. RESISTOR CH 1/16W 1.5K	1	
R5021	ERJ3GEYJ100	M. RESISTOR CH 1/16W 10	1	
R5024	ERJ2GEJ103	M. RESISTOR CH 1/16W 10K	1	
R5025	ERJ2GEJ271	M. RESISTOR CH 1/16W 270	1	
R5026	ERJ2GE0R00	M. RESISTOR CH 1/16W 0	1	
R5028	ERJ2GEJ152	M. RESISTOR CH 1/16W 1.5K	1	
R5029	ERJ6GEY0R00	M. RESISTOR CH 1/10W 0	1	
		MISCELLANEOUS		
	VSC4639	SHIELD COVER	1	
■	VEP22265A	CCD FLEX. CARD C.B.A.		(RTL)
		MISCELLANEOUS		
	VJB22265	FLEX. CARD	1	

INTERNAL REFERENCE CODES

NOTE: This chart is only for internal reference.
Do not order any parts according to these codes.

P.B.C.	FILM CODE
VTR.MAIN	HOKU00-03E26
CAMERA	HOKU00-23450
POWER	HOKU02-01801
DRIVE	HOKU00-02561
LCD I/F	HOKU00-00Y65
TOP OPERATION	HOKU00-06C15
E.V.F. (A)	HOKU00-28240
E.V.F. (B)	HOKU00-28244
MONITOR	HOKU00-26196
SENSOR FLEX. CARD	HOKU00-06C49
FRONT	HOKU00-04674
REAR OPERATION	HOKU00-06C16
HEAD AMP	HOKU01-05352
CCD FLEX. CARD	HOKU00-22265
MAIN	HOKU00-61257
AC MODULE	HOKU01-60530
DC MODULE	HOKU01-60531
OUTPUT BOX	HOKU00-63203

Panasonic

MATSUSHITA ELECTRIC

Printed in Japan

ORDER NO. VMD9706005A8

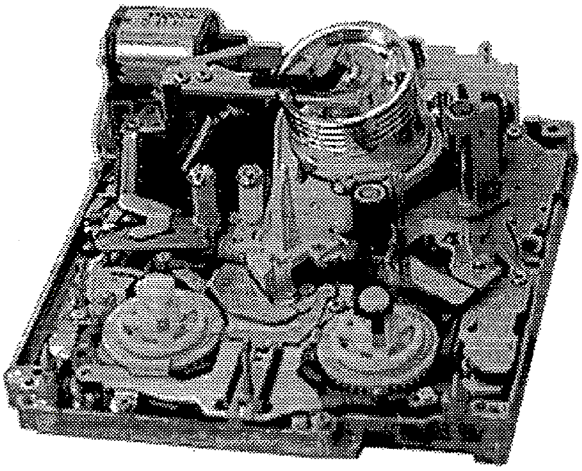
Service Manual

Disassembly/Assembly Procedures
Mechanical Adjustment Procedures
Exploded Views/Parts List

Panasonic Mini DV PAL

Digital Video Camera

DJ MECHANISM CHASSIS



INTRODUCTION

The DJ-Mechanism chassis are built in several Panasonic Digital Video Camera from NV-DX1 series in 1996.

⚠ WARNING
This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

© 1997 Matsushita Electric Industrial Co., Ltd.
All rights reserved. Unauthorized copying and distribution is a violation of law.

CONTENTS

1. Mechanical Parts Location 2
2. Disassembly/Assembly Procedures of Mechanism 2
    1. Garage Unit (Manual Eject) 3
    2. Earth Brush (Note of installation) 3
    3. Loading Motor Unit 3
    4. Head Amp C.B.A. 3
    5. Cylinder Unit 3
    6. Cleaning Arm Unit (Note of installation) 3
    7. Pinch Arm & T3 Arm Unit (Note of installation) 3
    8. Tension Arm Unit (Note of installation) 3
    9. Reel Tables & Brakes (Note of installation) 3
    10. Play & FF/REW Gear 5
    11. T2 Arm Unit (Note of installation) 5
    12. S1 & T1 Base (Note of installation) 5
    13. S1 Arm (Note of installation) 5
    14. Radon Plate, Radon Arm & T1 Arm (Note of installation) 5
    15. Pad Arm (Note of installation) 5
    16. Eject Arm 5
    17. Mode Gear & Main Cam Gear (Note of installation) 5
    18. T3 Rod & Brake Rod (Note of installation) 7
    19. Capstan Belt (Note of installation) 7
    20. Capstan Motor Unit 7
3. Mechanical Adjustment Procedure 8
    - 3-1. Test Equipment and Tools 8
    - 3-2. Mechanism Adjustment 9
        1. Tension Post & T3 Post Height Adjustment 9
        2. Tension Post Position Adjustment 10
        3. Supply & Take-up Reel Tables Height Adjustment 10
        4. Cap. Tilt Adjustment 10
        5. Confirmation 10
            - 5-1. Confirmation of tape travel 10
            - 5-2. Confirmation of the Envelope Output 12
        6. Final Adjustment with BER Counter and "Tatsujin Kit" 13
4. Exploded Views & Parts List 15
    - ❶ VCR Mechanism 1 Section 15
    - ❷ VCR Mechanism 2 Section 16

1. Mechanical Parts Location

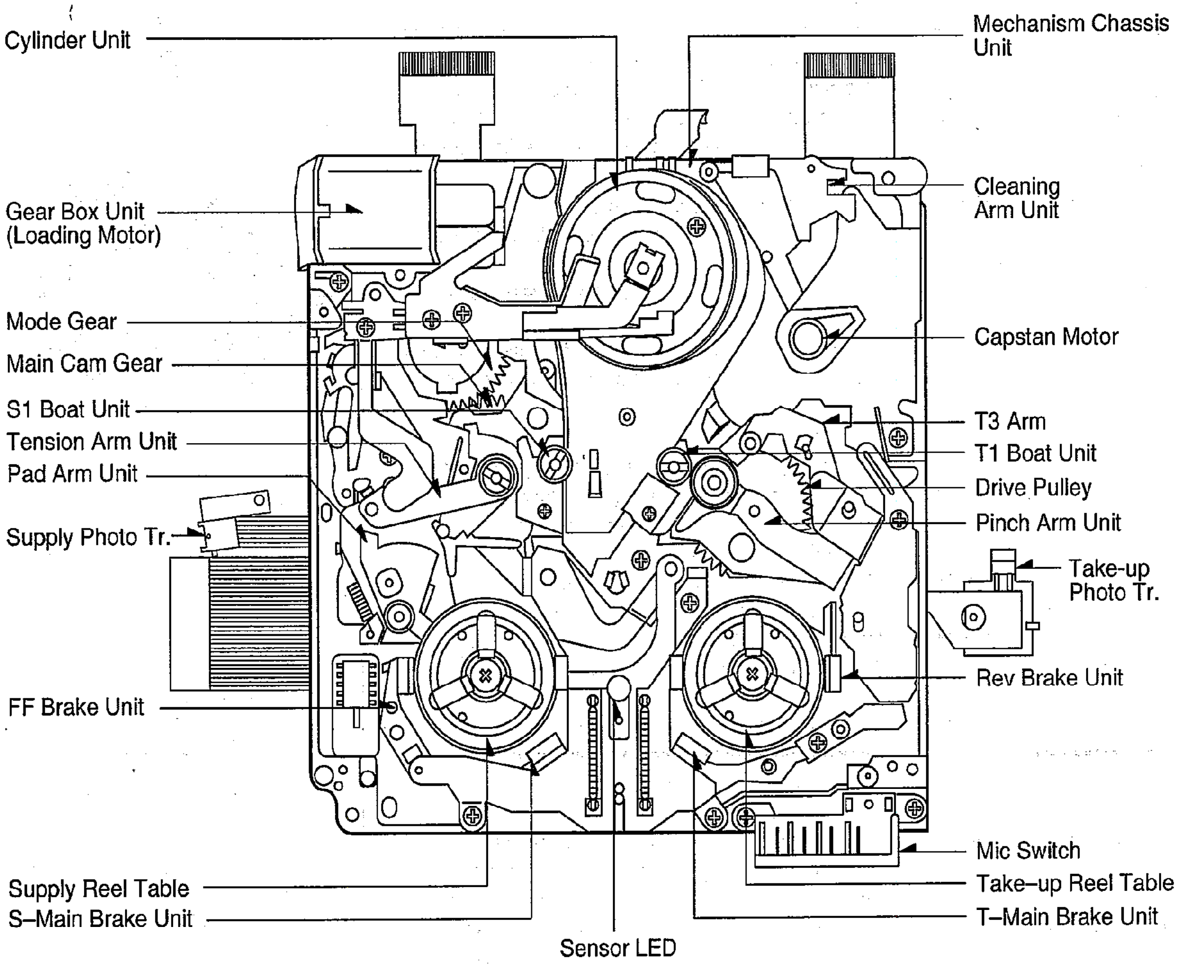

Cylinder Unit
Mechanism Chassis Unit
Gear Box Unit (Loading Motor)
Cleaning Arm Unit
Mode Gear
Capstan Motor
Main Cam Gear
S1 Boat Unit
T3 Arm
Tension Arm Unit
T1 Boat Unit
Pad Arm Unit
Drive Pulley
Supply Photo Tr.
Pinch Arm Unit
Take-up Photo Tr.
Rev Brake Unit
FF Brake Unit
Mic Switch
Supply Reel Table
Take–up Reel Table
S–Main Brake Unit
T–Main Brake Unit
Sensor LED

Fig. 1

2. Disassembly/Assembly Procedures of Mechanism

This procedure starts with the condition that the mechanism unit has been removed from the unit.

The following chart indicates disassembly steps of the mechanical parts in order to gain access to part for servicing. When reassembling, perform the steps in the reverse order. Then apply the Molyton Grease to the lubrication point.

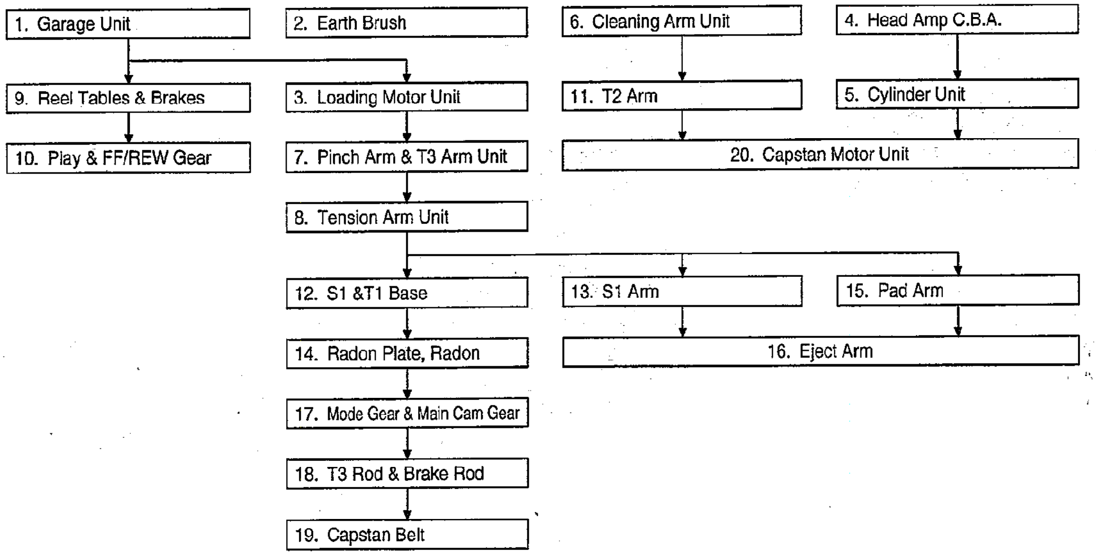

1. Garage Unit
2. Earth Brush
6. Cleaning Arm Unit
4. Head Amp C.B.A.
9. Reel Tables & Brakes
3. Loading Motor Unit
11. T2 Arm
5. Cylinder Unit
10. Play & FF/REW Gear
7. Pinch Arm & T3 Arm Unit
20. Capstan Motor Unit
8. Tension Arm Unit
12. S1 &T1 Base
13. S1 Arm
15. Pad Arm
14. Radon Plate, Radon
16. Eject Arm
17. Mode Gear & Main Cam Gear
18. T3 Rod & Brake Rod
19. Capstan Belt

Fig. 2

1. Mechanical Parts Location

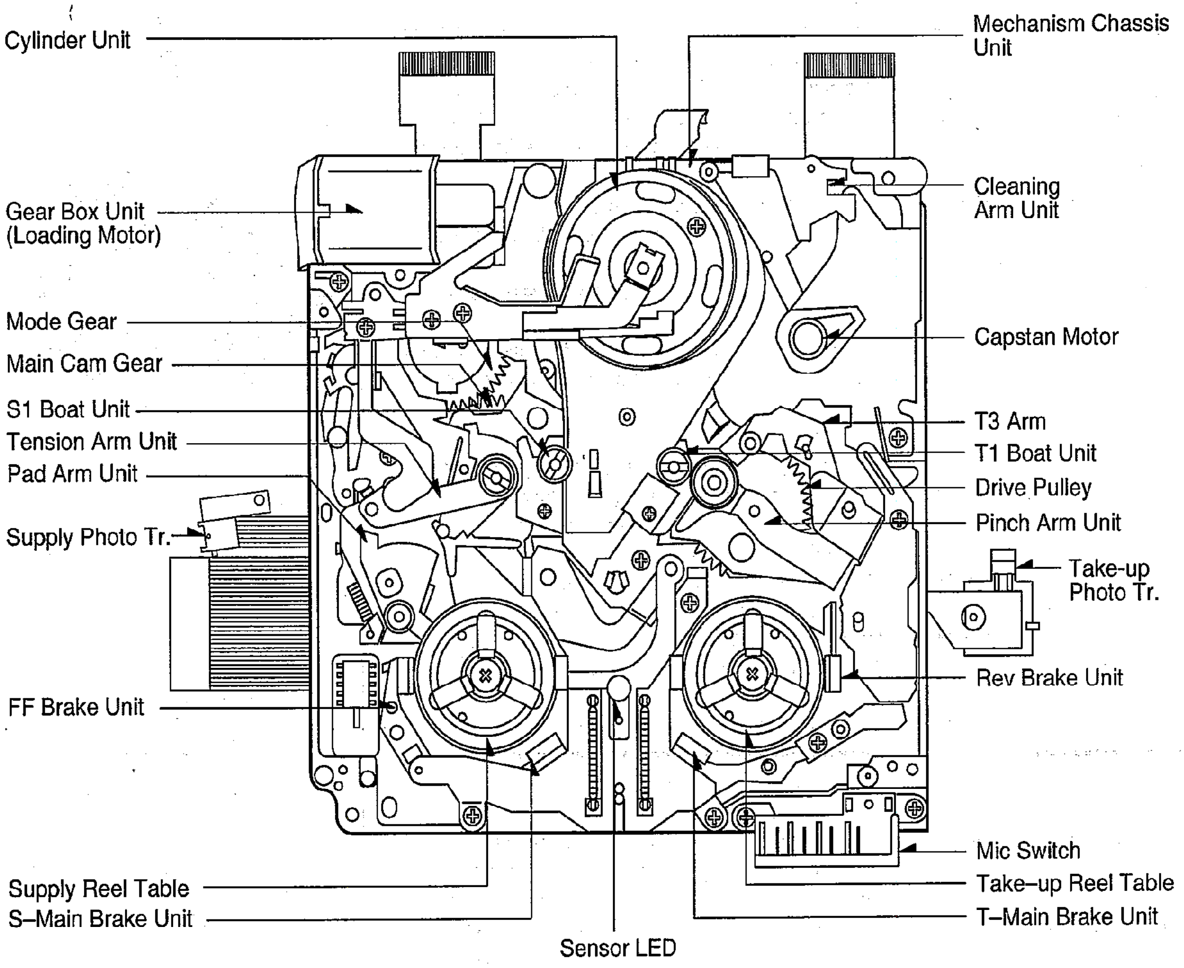

Cylinder Unit
Gear Box Unit
(Loading Motor)
Mode Gear
Main Cam Gear
S1 Boat Unit
Tension Arm Unit
Pad Arm Unit
Supply Photo Tr.
FF Brake Unit
Supply Reel Table
S–Main Brake Unit
Sensor LED
Mechanism Chassis Unit
Cleaning Arm Unit
Capstan Motor
T3 Arm
T1 Boat Unit
Drive Pulley
Pinch Arm Unit
Take-up Photo Tr.
Rev Brake Unit
Mic Switch
Take–up Reel Table
T–Main Brake Unit

Fig. 1

2. Disassembly/Assembly Procedures of Mechanism

This procedure starts with the condition that the mechanism unit has been removed from the unit.

The following chart indicates disassembly steps of the mechanical parts in order to gain access to part for servicing. When reassembling, perform the steps in the reverse order. Then apply the Molyton Grease to the lubrication point.

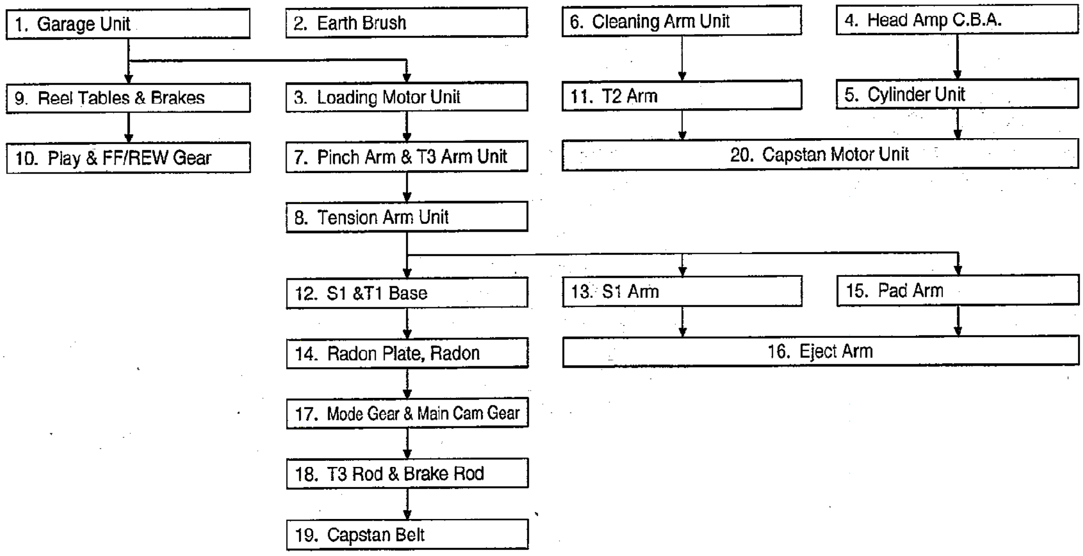

1. Garage Unit
2. Earth Brush
6. Cleaning Arm Unit
4. Head Amp C.B.A.
9. Reel Tables & Brakes
3. Loading Motor Unit
11. T2 Arm
5. Cylinder Unit
10. Play & FF/REW Gear
7. Pinch Arm & T3 Arm Unit
20. Capstan Motor Unit
8. Tension Arm Unit
12. S1 &T1 Base
13. S1 Arm
15. Pad Arm
14. Radon Plate, Radon
16. Eject Arm
17. Mode Gear & Main Cam Gear
18. T3 Rod & Brake Rod
19. Capstan Belt

Fig. 2

1. Garage Unit	Fig. M1	Slide the Lock Lever using tweezers to eject the Garage Unit.
(Manual Eject)	Fig. M2	Unscrew 2 screws (A) and remove Supply and Take-up Photo Transistors from Garage Unit. Unscrew 4 screws (B) and remove the Garage Unit.
2. Earth Brush	Fig. M3	Unscrew 2 screws (C) and remove the Earth Brush.
(Note of installation)	Fig. M4	When installing the Earth Brush, align the Earth Brush tip position.
3. Loading Motor Unit	Fig. M5	Unsolder the soldered portion (D). Unscrew 2 screws (E) and remove the Loading Motor Unit.
4. Head Amp C.B.A.	Fig. M6	Unscrew screw (F) and remove the Capstan Cover. Disconnect FP5001. Unscrew 2 screws (G) and remove the Head Amp C.B.A..
5. Cylinder Unit	Fig. M7	Unscrew 3 screws (H) and remove the Cylinder Unit carefully. Do not touch the Video Head.
6. Cleaning Arm Unit	Fig. M8	Unlock the locking portion of the Cleaning Arm Unit.
(Note of installation)	Fig. M9	Hooking portion of the Cleaning Arm Spring is; Spring (a) —— Cleaning Arm Spring (a') Spring (b) —— T2 Arm Unit (b')
7. Pinch Arm & unlock T3 Arm Unit	Fig. M10	Unscrew screw (I), then slide the Pinch Pressure Plate and unlock the locking portion.
	Fig. M11	Remove the T3 Arm Unit.
(Note of installation)		After installed T3 Arm Unit, the Height Adjustment is required.
	Fig. M12	Remove the Pinch Arm Unit and Pinch Arm Spring.
(Note of installation)		Hooking portion of the Pinch Arm Spring is; Spring (c) —— Pinch Arm (c') Spring (d) —— T3 Rod (d')
8. Tension Arm Unit	Fig. M13	Turn the Mode Gear to counter-clockwise until Tension Arm Unit slightly move to loading direction. Remove the Tension Arm Unit and Cut Washer (J).
(Note of installation)		The projection (e) on Tension Arm meets guide (e') on the T3 Rod which is shifted by turning Mode Gear.
9. Reel Tables & Brakes	Fig. M14	Unhook the hooking portion (f) and (f'). Unscrew 3 screws (K) and remove Cover Plate.
	Fig. M15	Remove Supply and Take-up Reel Tables.

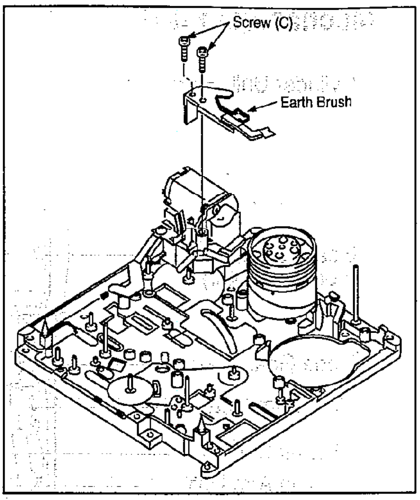

Screw (C)
Earth Brush

Fig. M3

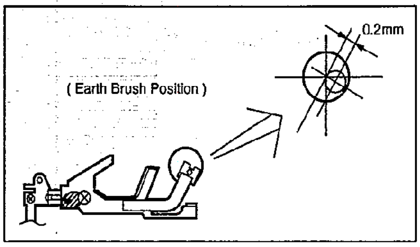

0.2mm
(Earth Brush Position)

Fig. M4

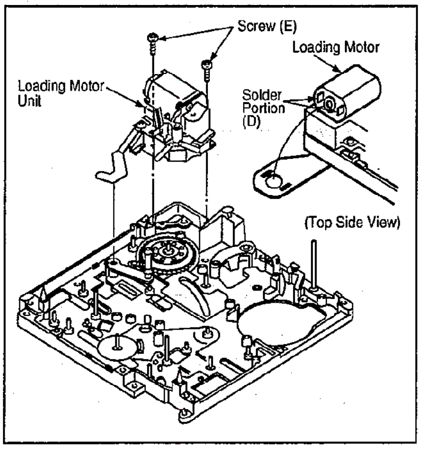

Screw (E)
Loading Motor
Loading Motor Unit
Solder Portion (D)
(Top Side View)

Fig. M5

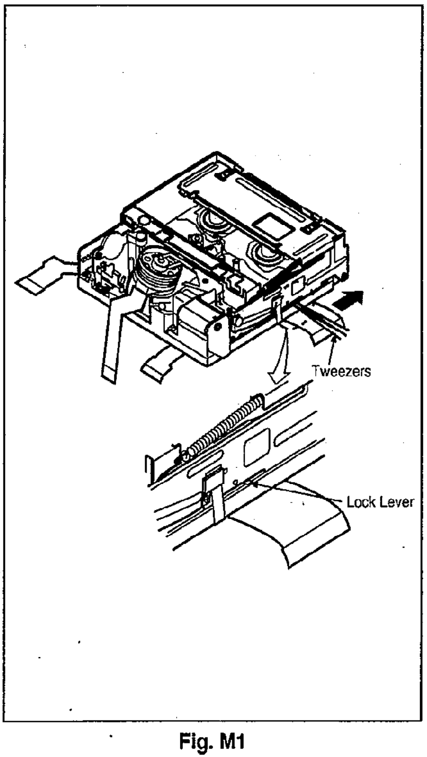

Tweezers
Lock Lever

Fig. M1

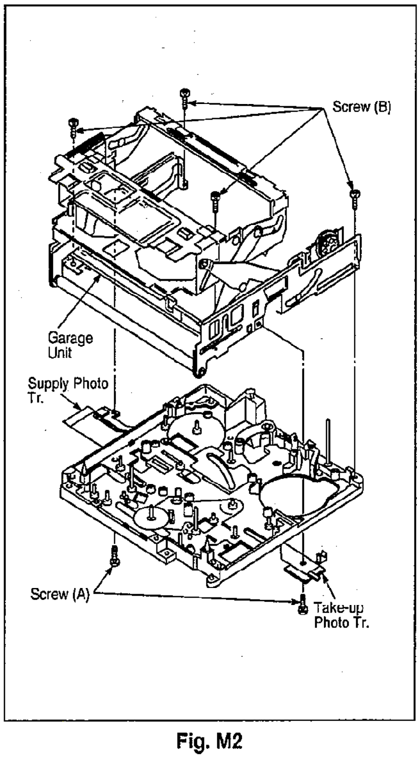

Screw (B)
Garage Unit
Supply Photo Tr.
Screw (A)
Take-up Photo Tr.

Fig. M2

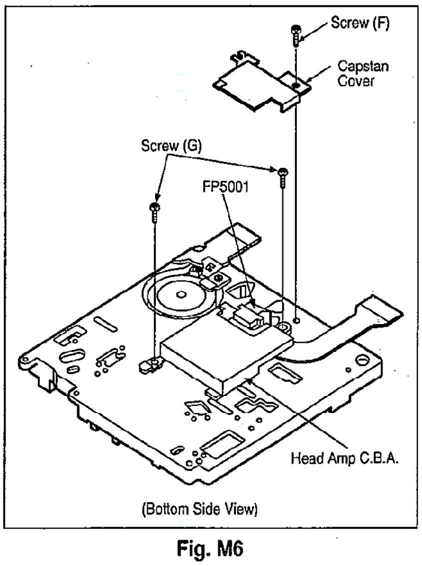

Screw (F)
Capstan Cover
Screw (G)
FP5001
Head Amp C.B.A.
(Bottom Side View)

Fig. M6

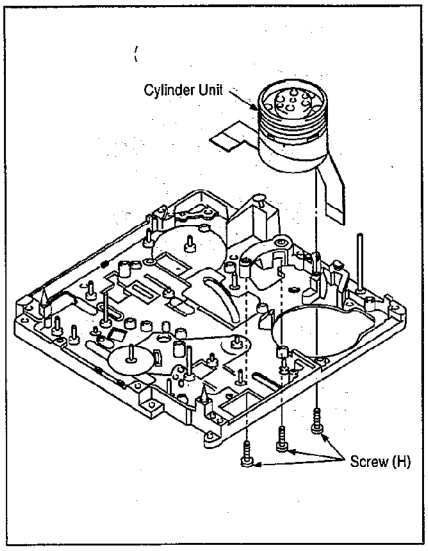

Cylinder Unit
Screw (H)

Fig. M7

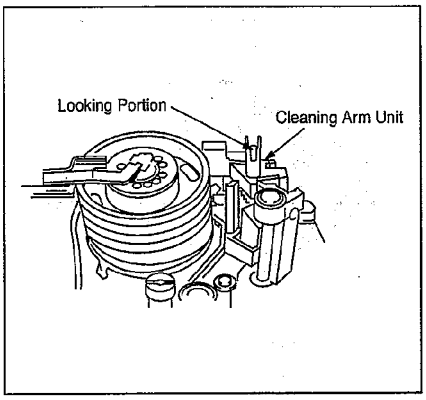

Looking Portion
Cleaning Arm Unit

Fig. M8

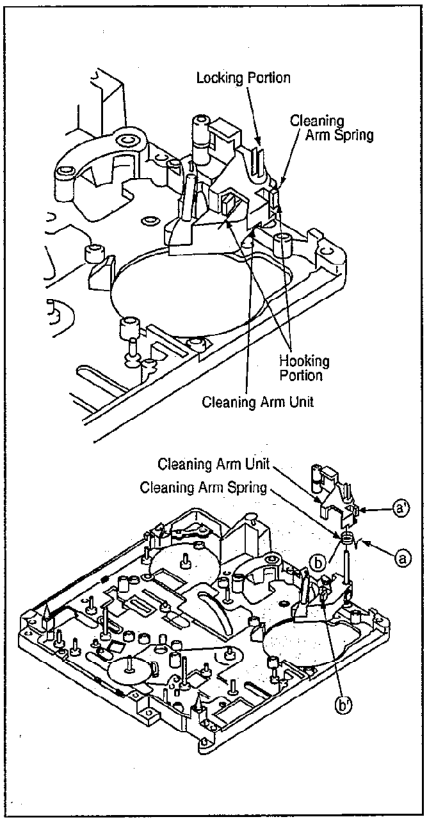

Locking Portion
Cleaning Arm Spring
Hooking Portion
Cleaning Arm Unit
Cleaning Arm Unit
Cleaning Arm Spring
ⓐ'
ⓐ
ⓑ
ⓑ'

Fig. M9

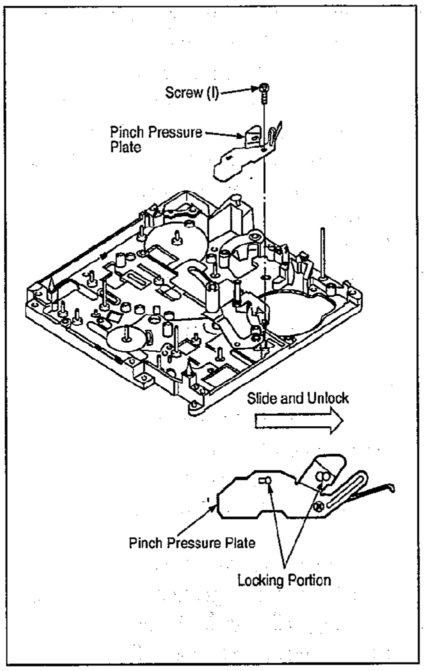

Screw (I)
Pinch Pressure Plate
Slide and Unlock
Pinch Pressure Plate
Locking Portion

Fig. M10

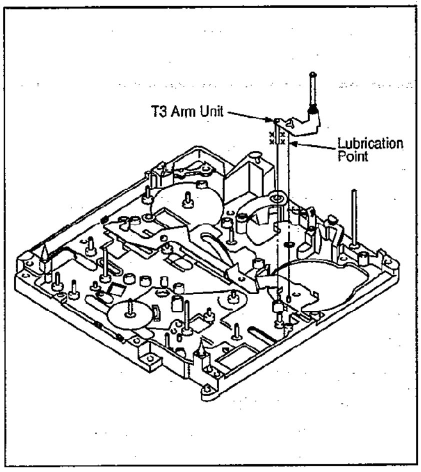

T3 Arm Unit
Lubrication Point

Fig. M11

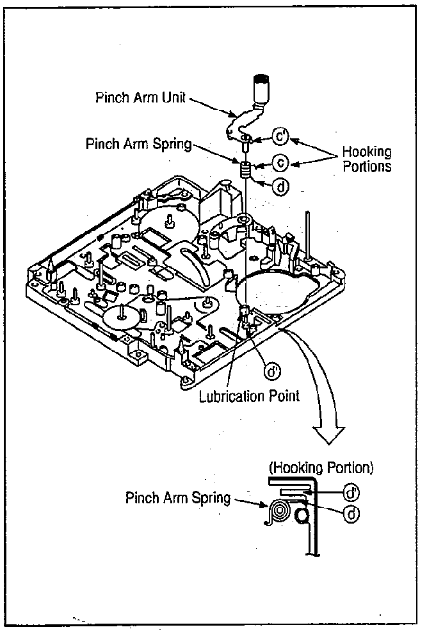

Pinch Arm Unit
Pinch Arm Spring
ⓒ'
ⓒ
ⓓ
Hooking Portions
ⓓ'
Lubrication Point
(Hooking Portion)
Pinch Arm Spring
ⓓ'
ⓓ

Fig. M12

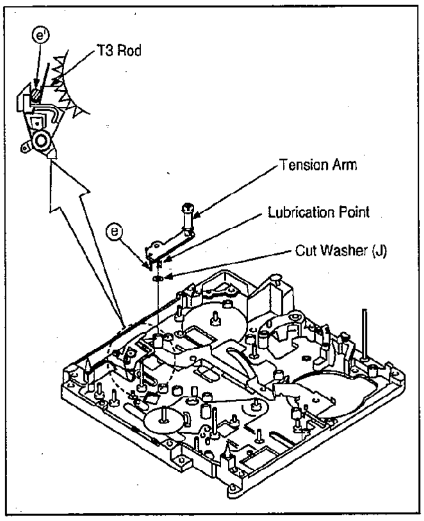

ⓔ'
T3 Rod
Tension Arm
Lubrication Point
ⓔ
Cut Washer (J)

Fig. M13

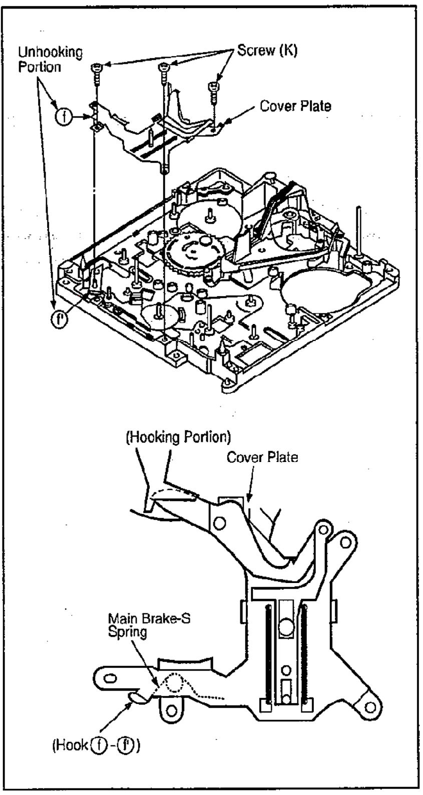

Unhooking Portion
Screw (K)
Cover Plate
ⓕ
ⓕ'
(Hooking Portion)
Cover Plate
Main Brake-S Spring
(Hook ⓕ-ⓕ')

Fig. M14

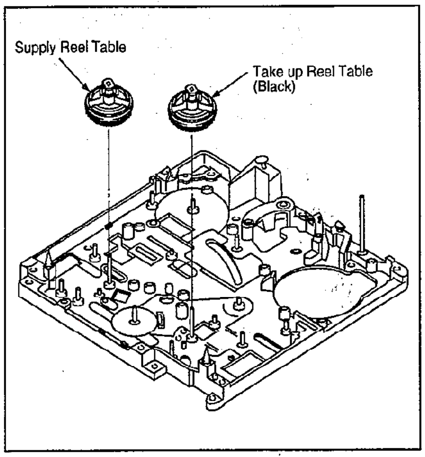

Supply Reel Table
Take up Reel Table (Black)

Fig. M15

	Fig. M16	Unhook the hooking portion (g) and (g') of the Review Brake Spring and remove Review Brake.
	Fig. M17	Remove the FF Brake and FF Brake Spring.
(Note of installation)		Confirm the hooking portion of the FF Brake Spring.
	Fig. M18	Remove the Main Brake S and Main Brake-S Spring.
(Note of installation)		Confirm the hooking portion of the Main Brake-S Spring.
	Fig. M19	Remove the Cut Washer (L) and Main Brake T Unit.
(Note of installation)		Confirm the hooking portion of the Main Brake T Spring.
10. Play & FF/REW Gear	Fig. M20	Remove the Play Idler and Play Gear.
11. T2 Arm Unit	Fig. M21	Remove the Cut Washer (M) and T2 Arm Unit with Spring.
(Note of installation)		Confirm the hooking portion of the T2 Arm Spring.
12. S1 &T1 Base	Fig. M22	Turn the Mode Gear to counter-clockwise until half loading position. Hold (N) and (O) positions on S1 and T1 Arm units and unlock the locking portions (A) and (B) with tweezers.
	Fig. M23	Remove 2 screws (P) and Cylinder Base Unit with S and T Boat Units. Then remove S and T Boat Units from the Cylinder Base Unit.
(Note of installation)		After install the Cylinder Base Unit, S and T Boat move to completed loading position by finger and turn the Mode Gear to clockwise until half loading position. Then connect the locking portion (A) and (B).
13. S1 Arm	Fig. M24	Turn the Mode Gear to fully counter-clockwise. Remove the Cut Washer (Q) and S1 Arm Unit.
14. Radon Plate, Radon Arm & T1 Arm	Fig. M25 Fig. M26	Unscrew 2 screws (R) and remove Radon Plate. Unscrew screw (S) and remove Radon Arm Unit.
(Note of installation)		When installing the T1 Arm Unit, the projection (j) on the Radon Arm Unit is aligned to guide (j') on the T1 Arm Unit by pushing the T1 Arm Unit.
	Fig. M27	Remove the T1 Arm Unit.
15. Pad Arm	Fig. M28	Unhook the hooking portion (k') of the Pad Arm Spring. Remove the Cut Washer (T) and Pad Arm Unit.
(Note of installation)		Confirm the hooking portion of the Pad Arm Spring (k —— k').
16. Eject Arm	Fig. M29	Unscrew 2 screws (U) and remove the Eject Arm Unit.
17. Mode Gear & Main Cam Gear	Fig. M30	Remove the Main Cam Gear. Unsolder the soldered portion (l) on the Mechanism Flexible Board. Then remove the Mode Gear.
(Note of installation)		The projection (m) on the Mode Gear meets the hole (m') on the Mechanism Chassis. Push the Brake and T3 Rod in fully left direction.

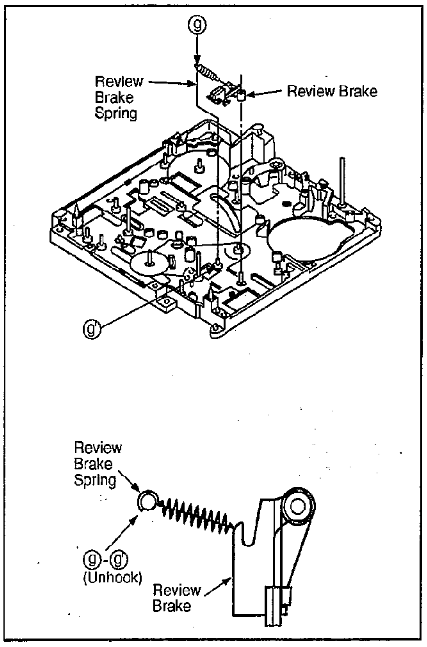

g
Review Brake Spring
Review Brake
g'
Review Brake Spring
g-g'
(Unhook)
Review Brake

Fig. M16

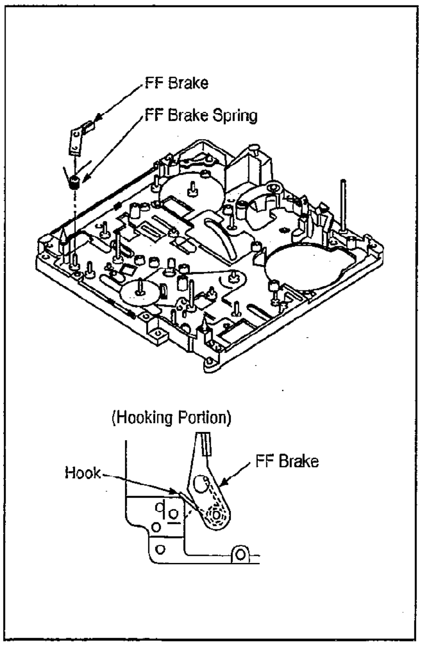

FF Brake
FF Brake Spring
(Hooking Portion)
Hook
FF Brake

Fig. M17

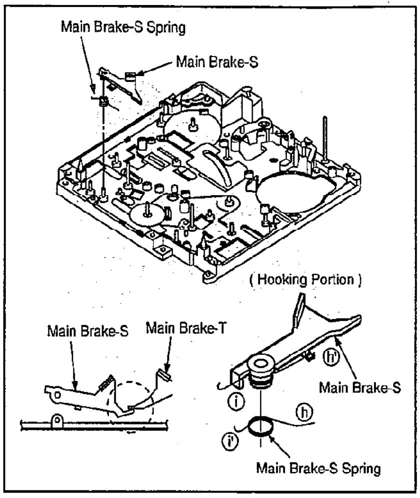

Main Brake-S Spring
Main Brake-S
(Hooking Portion)
Main Brake-S
Main Brake-T
h'
i
Main Brake-S
h
i'
Main Brake-S Spring

Fig. M18

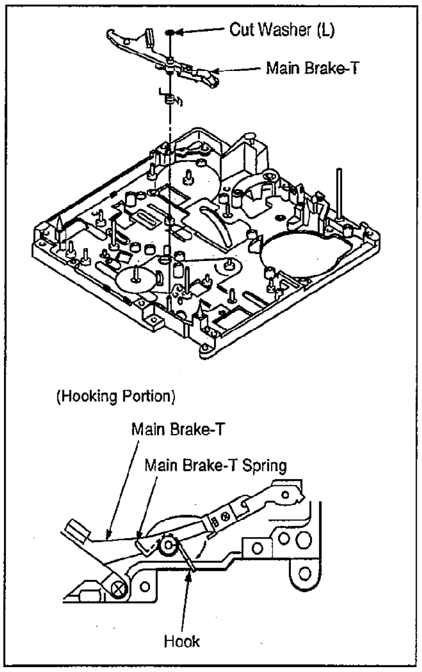

Cut Washer (L)
Main Brake-T
(Hooking Portion)
Main Brake-T
Main Brake-T Spring
Hook

Fig. M19

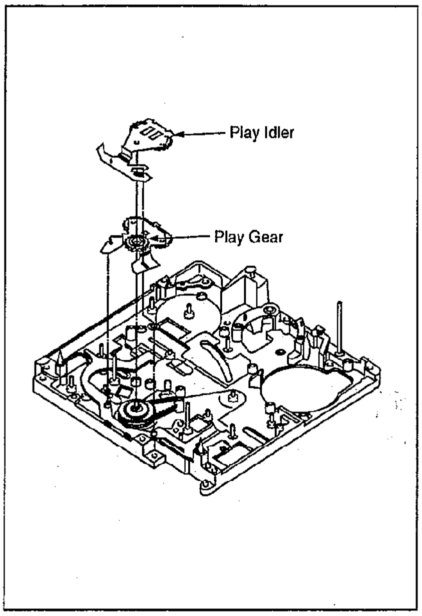

Play Idler
Play Gear

Fig. M20

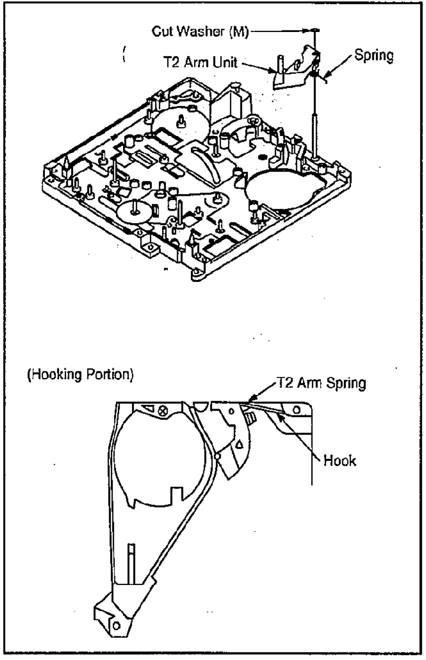

Cut Washer (M)
T2 Arm Unit
Spring
(Hooking Portion)
T2 Arm Spring
Hook

Fig. M21

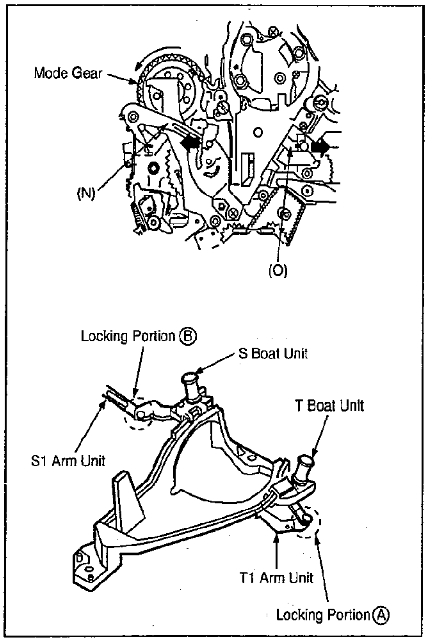

Mode Gear
(N)
(O)
Locking Portion Ⓑ
S Boat Unit
T Boat Unit
S1 Arm Unit
T1 Arm Unit
Locking Portion Ⓐ

Fig. M22

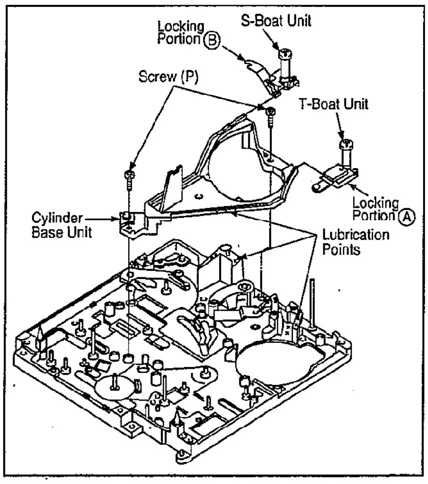

Locking Portion Ⓑ
S-Boat Unit
Screw (P)
T-Boat Unit
Cylinder Base Unit
Locking Portion Ⓐ
Lubrication Points

Fig. M23

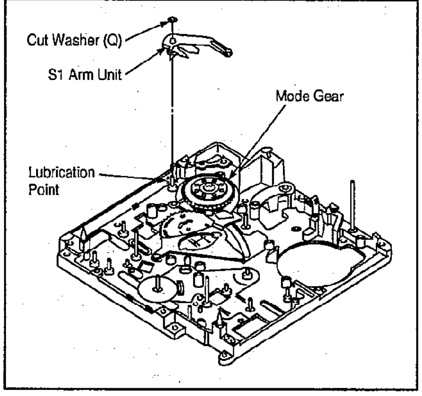

Cut Washer (Q)
S1 Arm Unit
Mode Gear
Lubrication Point

Fig. M24

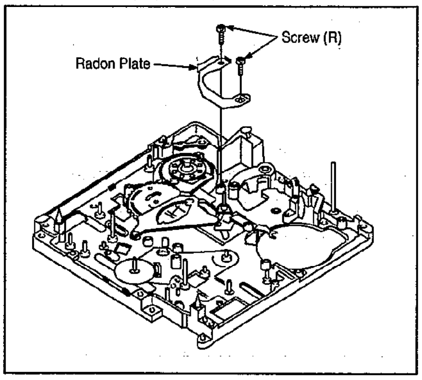

Screw (R)
Radon Plate

Fig. M25

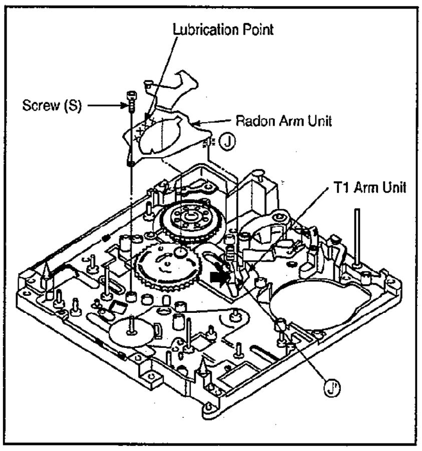

Lubrication Point
Screw (S)
Radon Arm Unit
Ⓙ
T1 Arm Unit
Ⓙ

Fig. M26

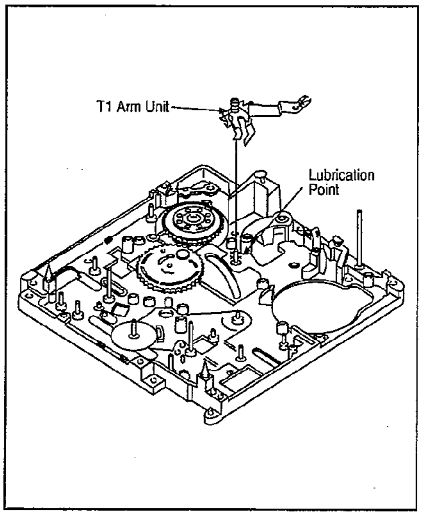

T1 Arm Unit
Lubrication Point

Fig. M27

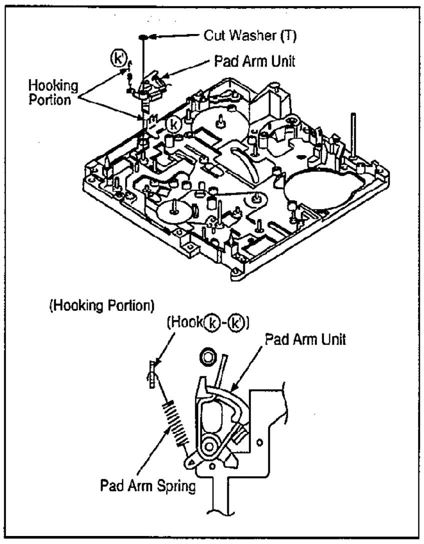

Cut Washer (T)
ⓚ
Pad Arm Unit
Hooking Portion
ⓚ
(Hooking Portion)
(Hook ⓚ-ⓚ)
Pad Arm Unit
Pad Arm Spring

Fig. M28

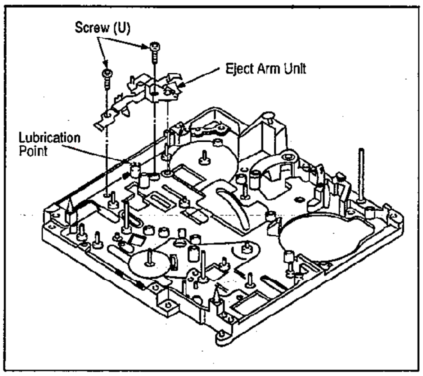

Screw (U)
Eject Arm Unit
Lubrication Point

Fig. M29

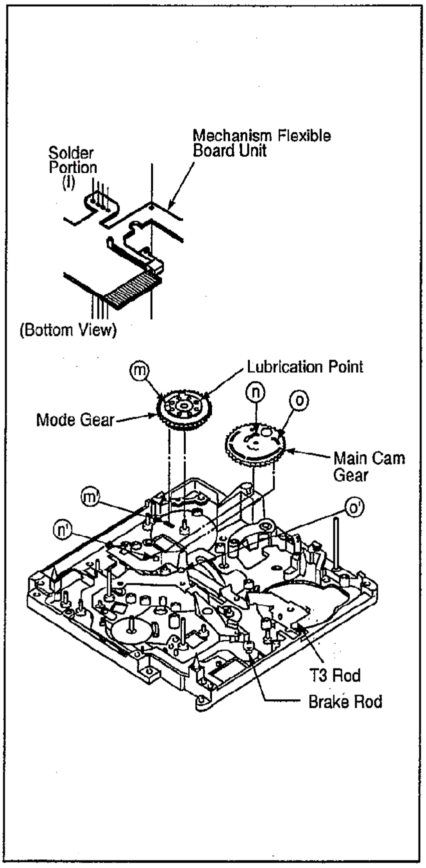

Solder Portion (I)
Mechanism Flexible Board Unit
(Bottom View)
ⓜ
Lubrication Point
ⓝ
ⓞ
Mode Gear
Main Cam Gear
ⓜ'
ⓝ'
ⓞ'
T3 Rod
Brake Rod

Fig. M30

(Note of installation)	Fig. M31	Install the Main Cam Gear so that the hole A on the Mode Gear is aligned to the hole B on the Main Cam Gear.
	Fig. M30	Shift the T3 Rod slowly in the right direction until guide (n) on the Main Cam Gear meets the projection (n') on the T3 Rod. Shift the Brake Rod slowly in the right direction until guide (o) on the Main Cam Gear meets the projection (o') on the Brake Rod.
18. T3 Rod & Brake Rod	Fig. M32	Remove the T3 Rod.
(Note of installation)		The projection (p) and (q) on the T3 Rod meet the guide (p') and (q') on the Mechanism Chassis.
	Fig. M33	Unscrew 2 screws (V) and remove the Brake Rod, Brake Rod Plate A and B.
(Note of installation)		The projection (r) and (s) on the Brake Rod meet the guide (r') and (s') on the Mechanism Chassis.
19. Capstan Belt	Fig. M34	Remove the Center Gear and Washer (W). Unscrew screw (X) and remove LED Holder. Remove Cut Washer (Y).
	Fig. M35	(Loosen a black screw on the Cap. Motor as shown in Fig. M36.) Slightly lift up in the direction and slowly remove the Capstan Gear. Do not bend the Capstan Shaft.
(Note of installation)		After installed Capstan Gear, confirm no warp of the Capstan Gear, no bend of the Capstan Gear Shaft and rotation of the Capstan and Center Gear smoothly.
	Fig. M34	Remove the Capstan Belt.
20. Capstan Motor Unit	Fig. M36	Unscrew 3 screws (Z) and remove Capstan Motor.
(Note of installation)		After installed Capstan Motor, Cap. Tilt Adjustment is required.

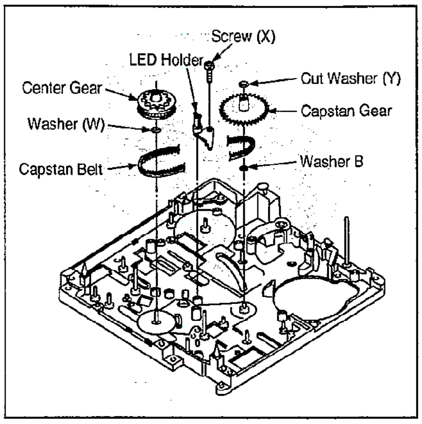

Screw (X)
LED Holder
Center Gear
Cut Washer (Y)
Capstan Gear
Washer (W)
Capstan Belt
Washer B

Fig. M34

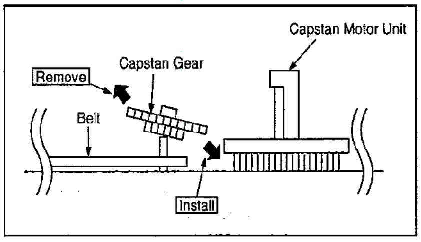

Capstan Motor Unit
Capstan Gear
Remove
Belt
Install

Fig. M35

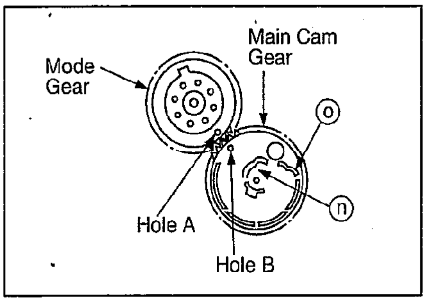

Main Cam Gear
Mode Gear
o
n
Hole A
Hole B

Fig. M31

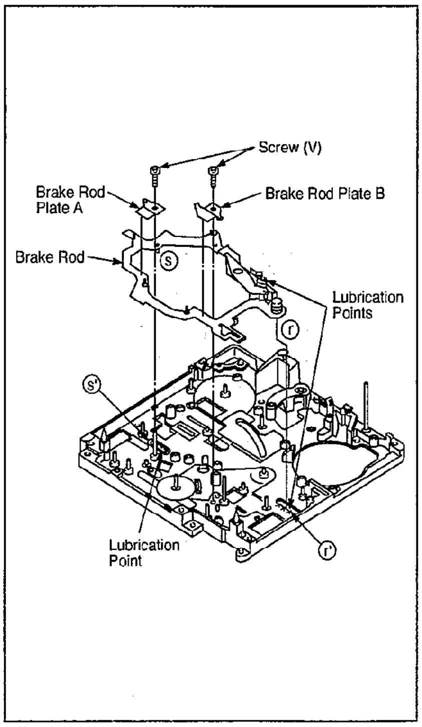

Screw (V)
Brake Rod Plate A
Brake Rod Plate B
Brake Rod
s
Lubrication Points
r
s'
Lubrication Point
r'

Fig. M33

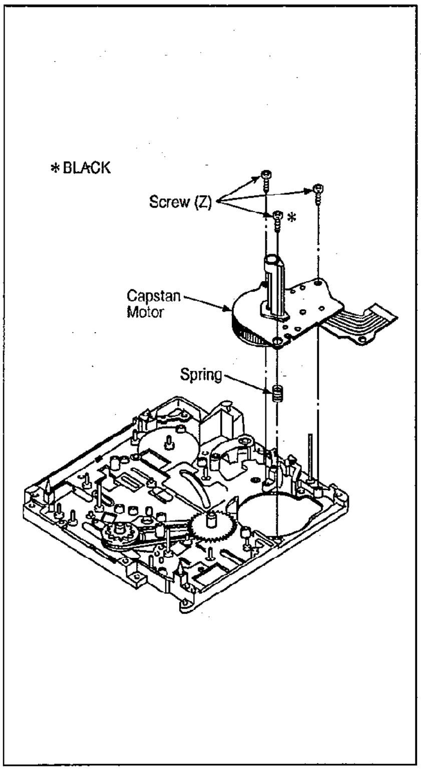

*BLACK
Screw (Z)
*
Capstan Motor
Spring

Fig. M36

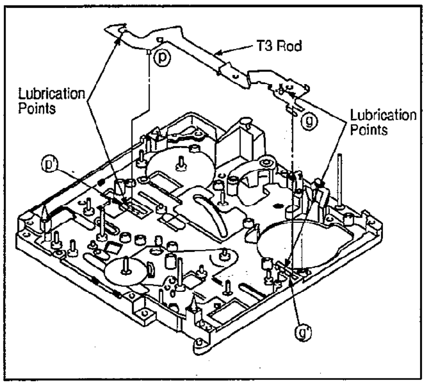

T3 Rod
p
Lubrication Points
q
Lubrication Points
p'
q'

Fig. M32

3. Mechanical Adjustment Procedure

3-1. Test Equipment and Tools

The following equipment is required for Mechanical adjustment.

1. ———	Tatsujin Kit for adjustment with PC
VFKW1000AA	PC-EVR I/F Unit
VFKW1000C	PC-EVR 232C Cable
VFKW0F0142	PC-EVR I/F Board
VFKW0F0001	Common Cable (2 pcs)
VFKW0T0006	Sub I/F Board for Video
VFKW0T0008	Video Attachment Cable
———	PC-EVR Software for NV-DX1
———	Personal Computer
2. VFK1234	BER Counter

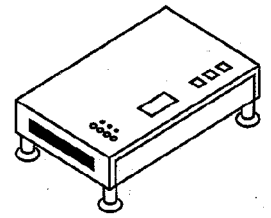


Fig. A1 For monitoring the Bit Error Rate

3. VFK1263 Counter Cables

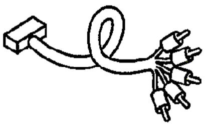


Fig. A2 For connection of the BER Counter

4. VFM3010EDS Alignment Tape

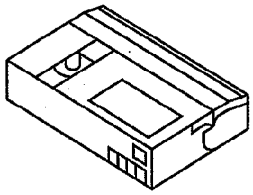


Fig. A3 For B.E.R. Adjustment

5. VFK1217 Sensor Cassette

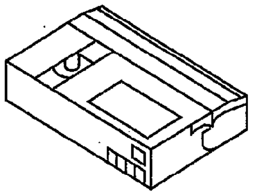


Fig. A4 For Sensor Adjustment

6. VFK1281 Mechanism Plate

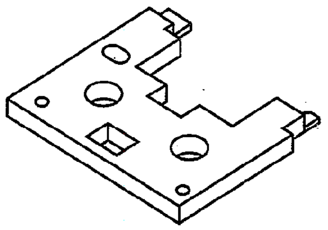


Fig. A5 For Post & Reel Height Adjustment

7. VFK1278 Post Adjustment Drive

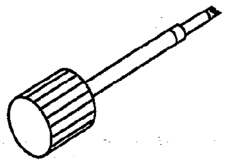


Fig. A6 For Post & Reel Height Adjustment

8. VFK1279 Cap. Tilt Adj. Plate

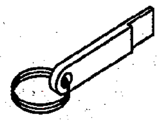


Fig. A7 For Capstan Tilt Adjustment

9. VFK1276 Loading Gear Driver

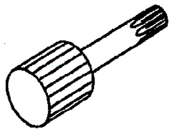


Fig. A8 For manual loading/unloading

3-2. Mechanism Adjustment

When the following parts is replaced, the mechanical adjustment is required.

Tension Post
T3 Post
Pad Arm Unit
Supply or Take-up Reel Tables
Capstan Motor

<PREPARATION>

Remove the Garage Unit and Loading Motor Unit as shown in Fig. M1 to M5.

1. Tension Post & T3 Post Height Adjustment

1. Set the Mechanism Plate (VFK1281) on the Mechanism Chassis.

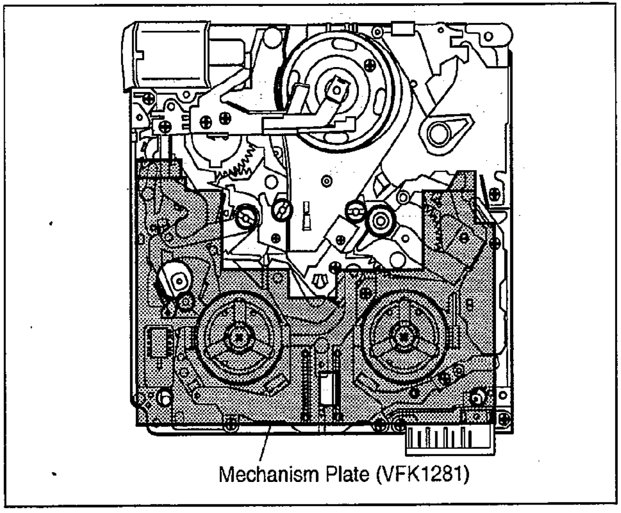

Mechanism Plate (VFK1281)

Fig. A9

2. Turn the Mode Gear fully counterclockwise to make full loading condition by using Loading Gear Driver (VFK1276).

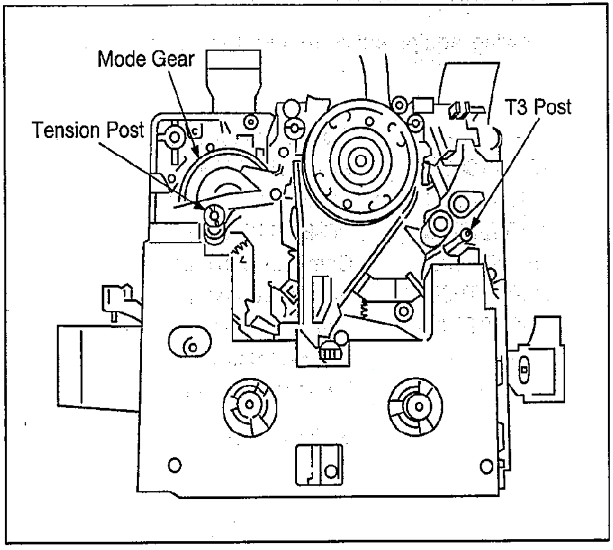

Mode Gear
Tension Post
T3 Post

Fig. A10

3. Adjust the Tension Post so that the lower flange (A) point become same height level to the top surface (B) of 2nd step of the Mechanism Plate as shown in Fig. A11.
4. Adjust the T3 Post so that the lower flange (C) point become same height level to the top surface (D) of the Mechanism Plate as shown in Fig. A11.

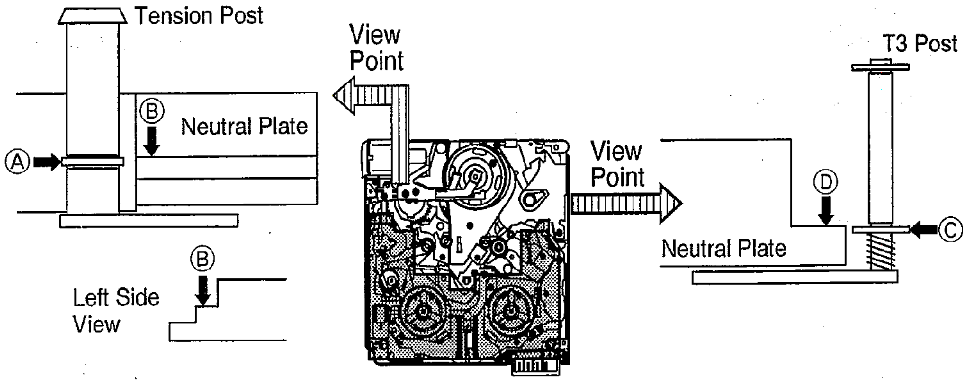

Tension Post
Ⓑ
Neutral Plate
Ⓐ
Ⓑ
Left Side View
View Point
View Point
T3 Post
Ⓓ
Neutral Plate
Ⓒ

Fig. A11

2. Tension Post Position Adjustment

1. Turn the adjustment piece on the Pad Arm Unit to fully counterclockwise.
2. Turn the Mode Gear to set the Mechanism position in the Play mode, the Soft Brake of the Pad Arm Unit just touch to the Supply Reel Table as shown in Fig. A12.
3. Set the Mechanism Plate on the Mechanism Chassis as shown in Fig. A9.
4. Adjust the adjustment piece on the Pad Arm Unit to clockwise direction slowly until the surface of the Tension Post comes to 2nd step (F) on the Mechanism Plate as shown in Fig. A12.

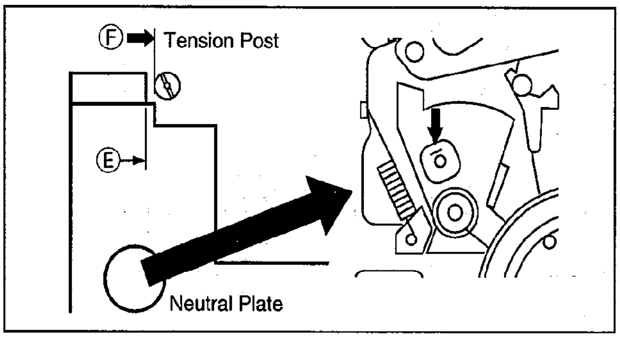

Ⓕ
Tension Post
Ⓔ
Neutral Plate

Fig. A12

5. After adjustment, turn the Mode Gear to unloading direction then turn back to loading direction, and make sure that position is correctly stop at above specification in Play position.

3. Supply & Take-up Reel Tables Height Adjustment

This adjustment should be perform for Supply or Take-up Reel Table one by one.

1. Turn the adjustment screw (A) on top of the Supply or Take-up Reel Table fully clockwise. Then, place the Mechanism Plate on the Mechanism Chassis as shown in Fig. A9.
2. Hold the Mechanism Plate by finger and slowly turn the adjustment screw to counterclockwise until just Reel Table rotating with adjustment screw as shown in Fig. A13.
3. Remove the Mechanism Plate and hold the Reel Table by finger then turn the adjustment screw counterclockwise to 45 degrees from above step point.

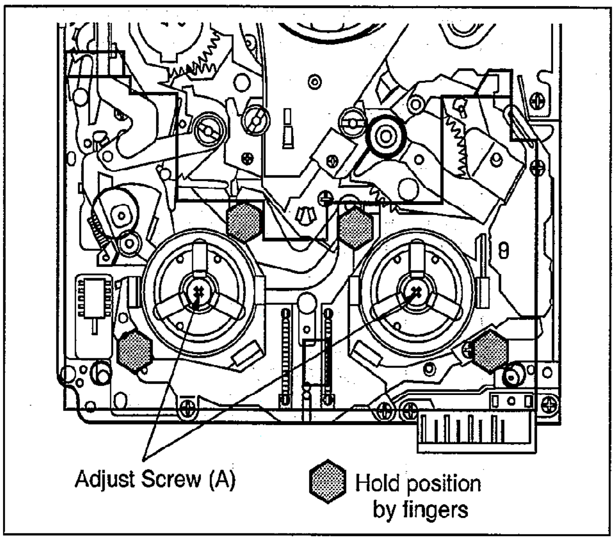

Adjust Screw (A)
Hold position by fingers

Fig. A13

4. Cap. Tilt Adjustment

1. Loosen the adjustment screw (G) and set the Cap. Tilt Adj. Plate (VFK1279) between Capstan Motor and Mechanism Chassis.
2. Turn the adjustment screw (G) to clockwise direction slowly until the Capstan Motor just touch to the Cap. Tilt Adj. Plate as shown in Fig. A14.

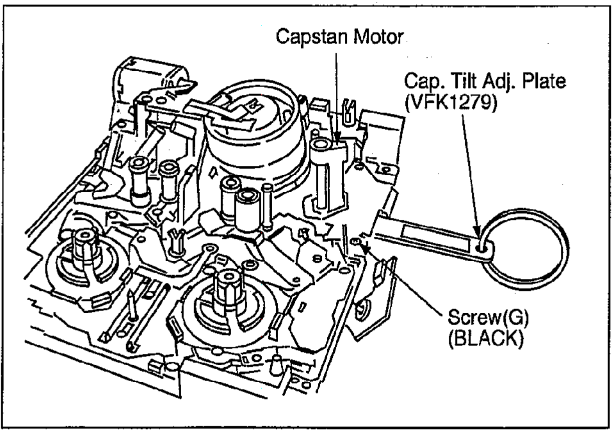

Capstan Motor
Cap. Tilt Adj. Plate (VFK1279)
Screw(G) (BLACK)

Fig. A14

5. Confirmation

5-1. Confirmation of tape travel

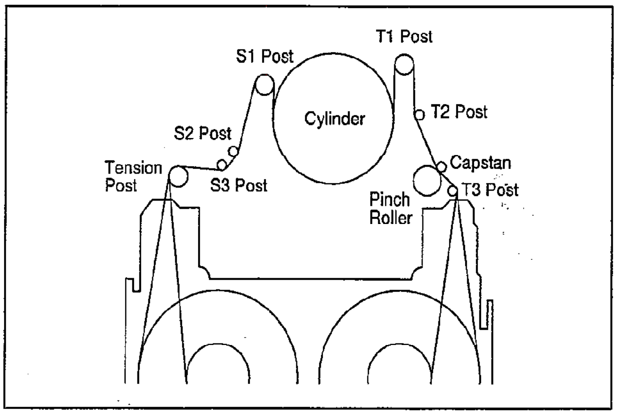

T1 Post
S1 Post
Cylinder
T2 Post
S2 Post
Tension Post
S3 Post
Capstan
T3 Post
Pinch Roller

Fig. A15

Play back the cassette tape and confirm that the tape travels without curling at the upper and lower guides on the following posts in the Play and REV modes as shown in Fig. A17.

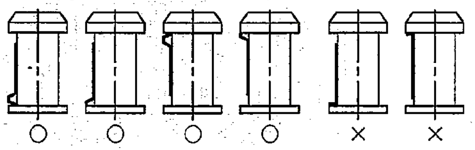
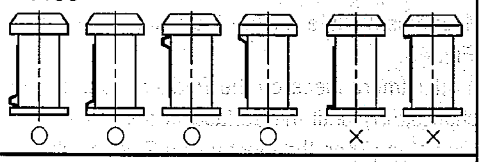
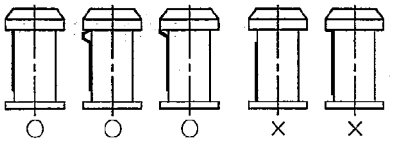
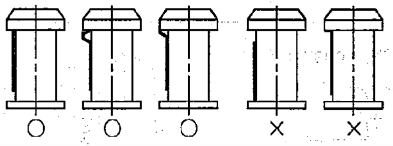
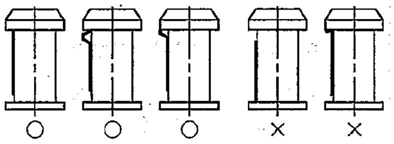
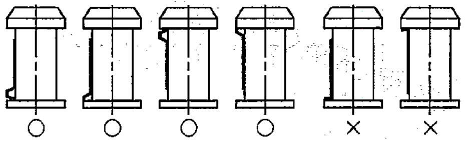
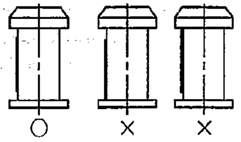
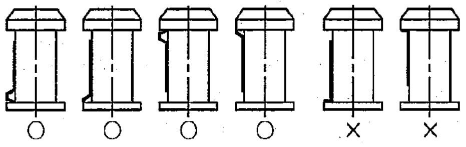
	PLAY	REV
Tension	Free  O O O O × ×	Free  O O O O × ×
S1	Upper Limit  O O O × ×	Upper Limit  O O O × ×
T1	Upper Limit  O O O × ×	Free  O O O O × ×
T3	Do not touch Upper or Lower guides  O × ×	Free  O O O O × ×

Fig. A16

If there are curing or damage at the guide of posts, readjust the height of the posts by turning the post with the Post Adjustment Driver.

5-2. Confirmation of the Envelope Output

1. Connect the "Tatsujin Kit" for video section as shown follows and play back a self recorded colour bar tape.

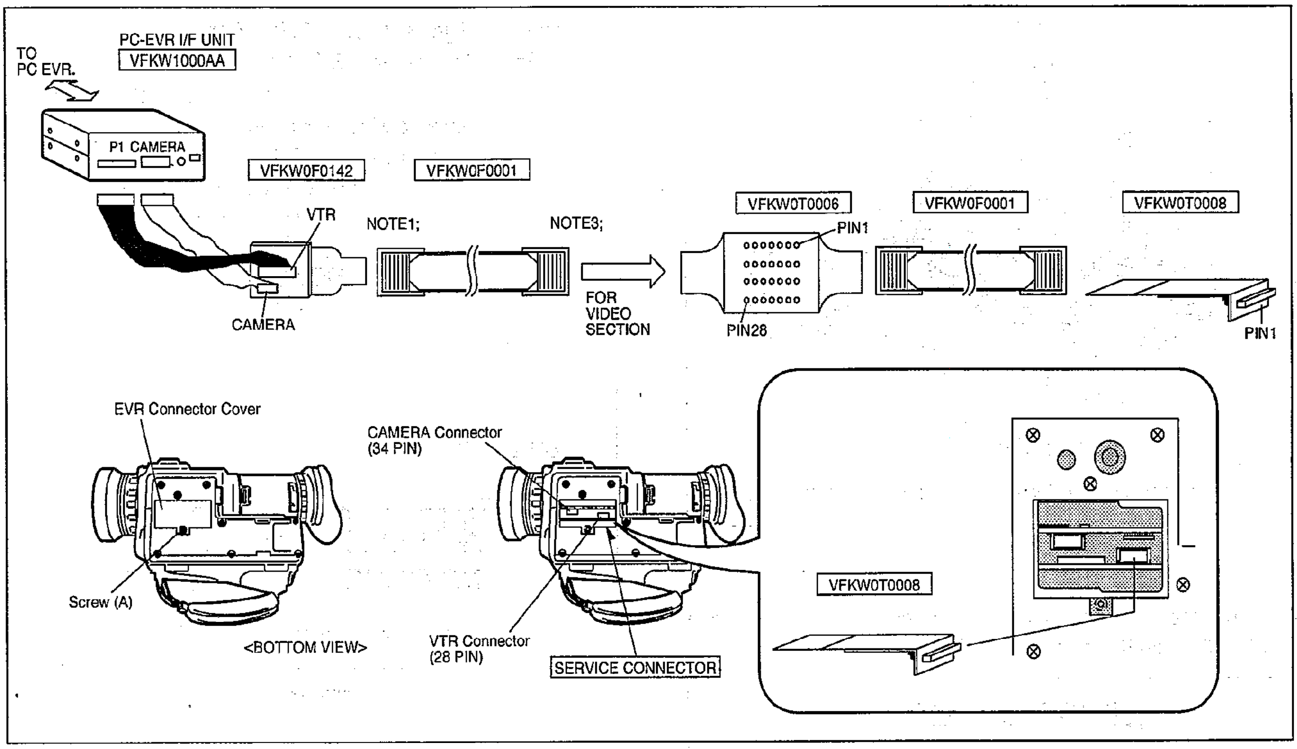

TO PC EVR.
PC-EVR I/F UNIT
VFKW1000AA
P1 CAMERA
VFKW0F0142
VFKW0F0001
VTR
CAMERA
NOTE1;
NOTE3;
FOR VIDEO SECTION
VFKW0T0006
PIN1
PIN28
VFKW0F0001
VFKW0T0008
PIN1
EVR Connector Cover
Screw (A)
<BOTTOM VIEW>
CAMERA Connector (34 PIN)
VTR Connector (28 PIN)
SERVICE CONNECTOR
VFKW0T0008

Fig. A17

2. Connect the oscilloscope to VTP1 (Envelope) and VTP2 (GND) on the SUB I/F Board (VFKW0T0006) and confirm that the envelope output is within following specification. Use VTP14 (HID) as a trigger.

V1/V max. 0.9
V2/V max. 0.9
V3/V max. 0.9

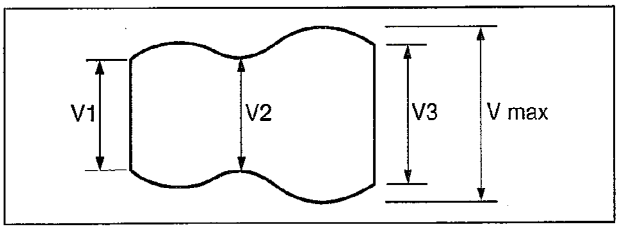

V1
V2
V3
V max

Fig. A18

3. If the level of the envelope signal is out of specification, readjust the Tension Post & T3 Post Height Adjustment.

<When adjusting the envelope signal within unit.>

1. Open the Cassette Door.
2. Unscrew screw (H) and release the Cassette Door Arm.

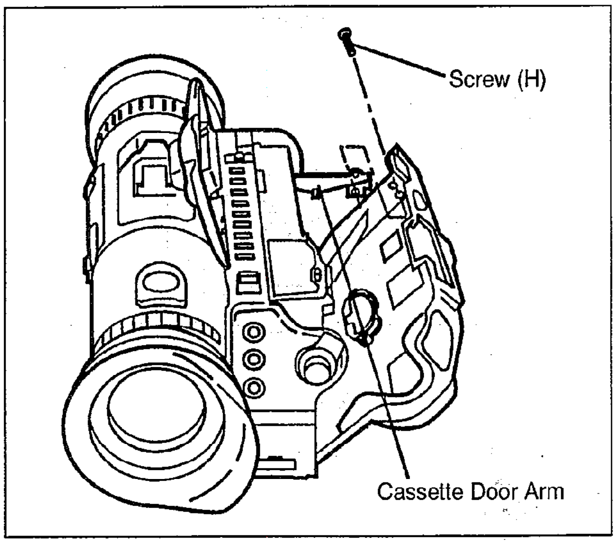

Screw (H)
Cassette Door Arm

Fig. A19

3. Unscrew 2 screws (I) and remove the Cassette Cover Open/Close Detect Switch C.B.A. to inhibit the detection of the cassette door open.

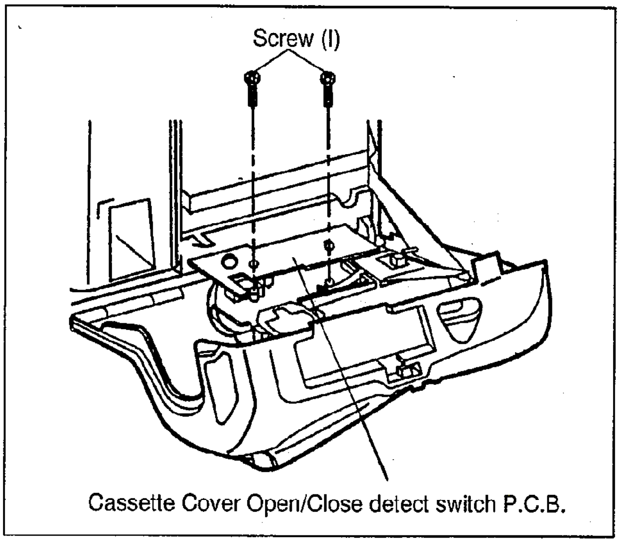

Screw (I)
Cassette Cover Open/Close detect switch P.C.B.

Fig. A20

4. Adjust the envelope signal by connecting the oscilloscope with "Tatsujin Kit" as shown in Fig. A17.

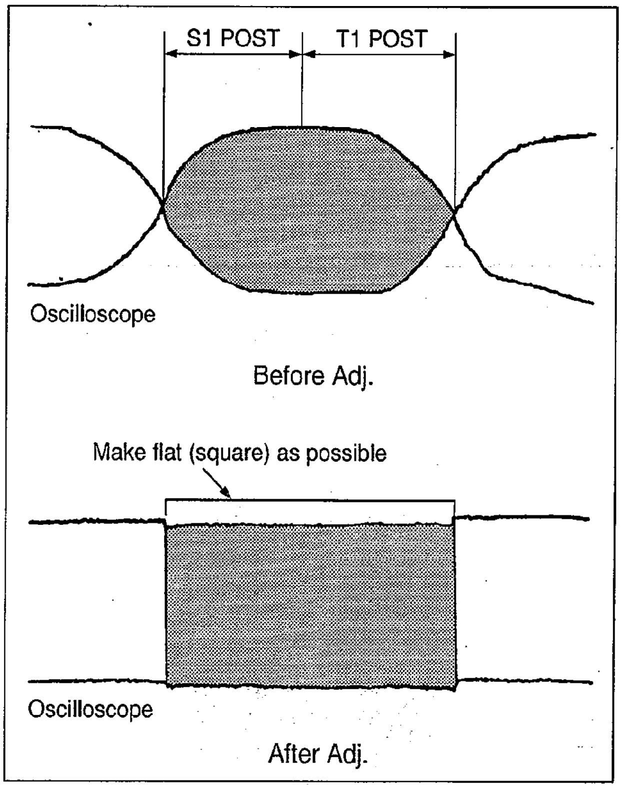

S1 POST
T1 POST
Oscilloscope
Before Adj.
Make flat (square) as possible
Oscilloscope
After Adj.

Fig. A21

6. Final Adjustment with BER Counter and "Tatsujin Kit".
   RF Adjustment

Tp : VTP23 (SBE)
Mode : PLAY
Tape : Alignment Tape (Colour Bar)
M.Eq. : Oscilloscope, B.E.R. Counter
Spec. : B.E.R. counter number less than 200 on removed Mechanism unit.
Confirm that the B.E.R. counter number less than 50 in the fully assembled condition.

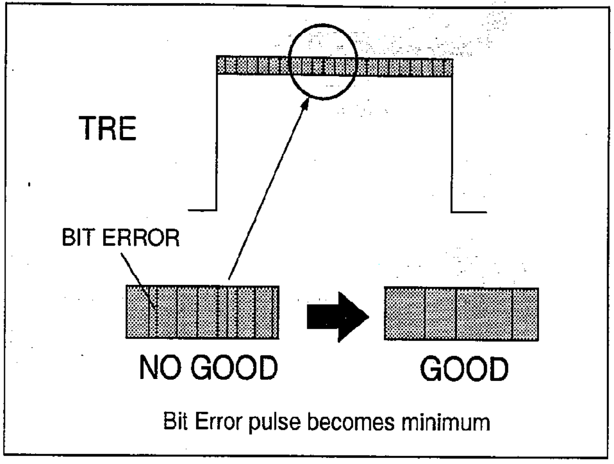

TRE
BIT ERROR
NO GOOD
GOOD
Bit Error pulse becomes minimum

Fig. A22

<Preparation>

Supply DC power supply (6V to 12V) to B.E.R. (Bit Error Rate) Counter.

Connect B.E.R. Counter (VFK1234) with B.E.R. Counter Cable (VFK1263) to following TP on PC-EVR I/F Board.

Sub I/F Board BER Counter
Pin 9 [D. GND] ⇒ Black Clip
Pin 22 [CLK18] ⇒ Blue Clip
Pin 23 [SBE] ⇒ White Clip
Pin 24 [HID] ⇒ Red Clip

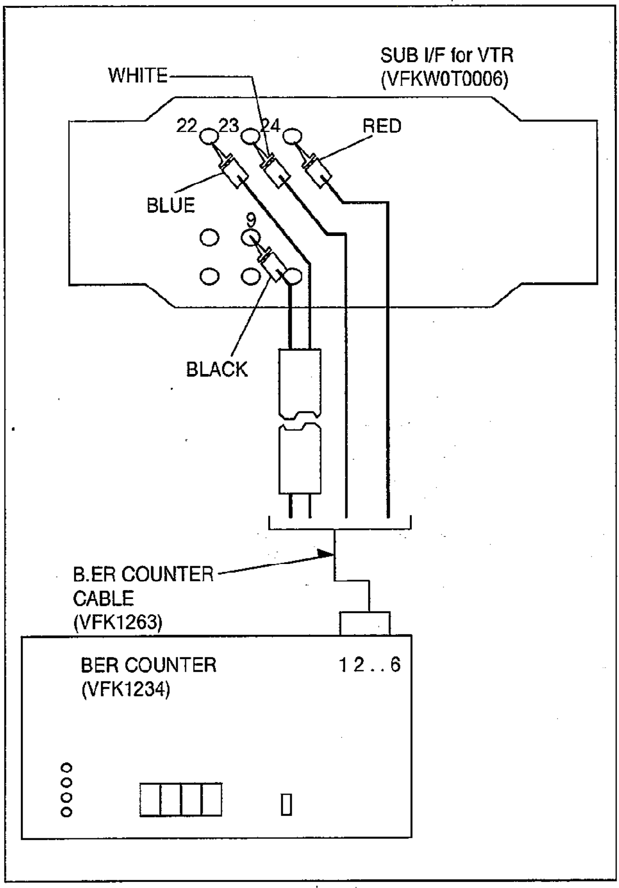

SUB I/F for VTR
(VFKW0T0006)
WHITE
22
23
24
RED
BLUE
9
BLACK
B.ER COUNTER
CABLE
(VFK1263)
BER COUNTER
(VFK1234)
1 2 . . 6

Fig. A23

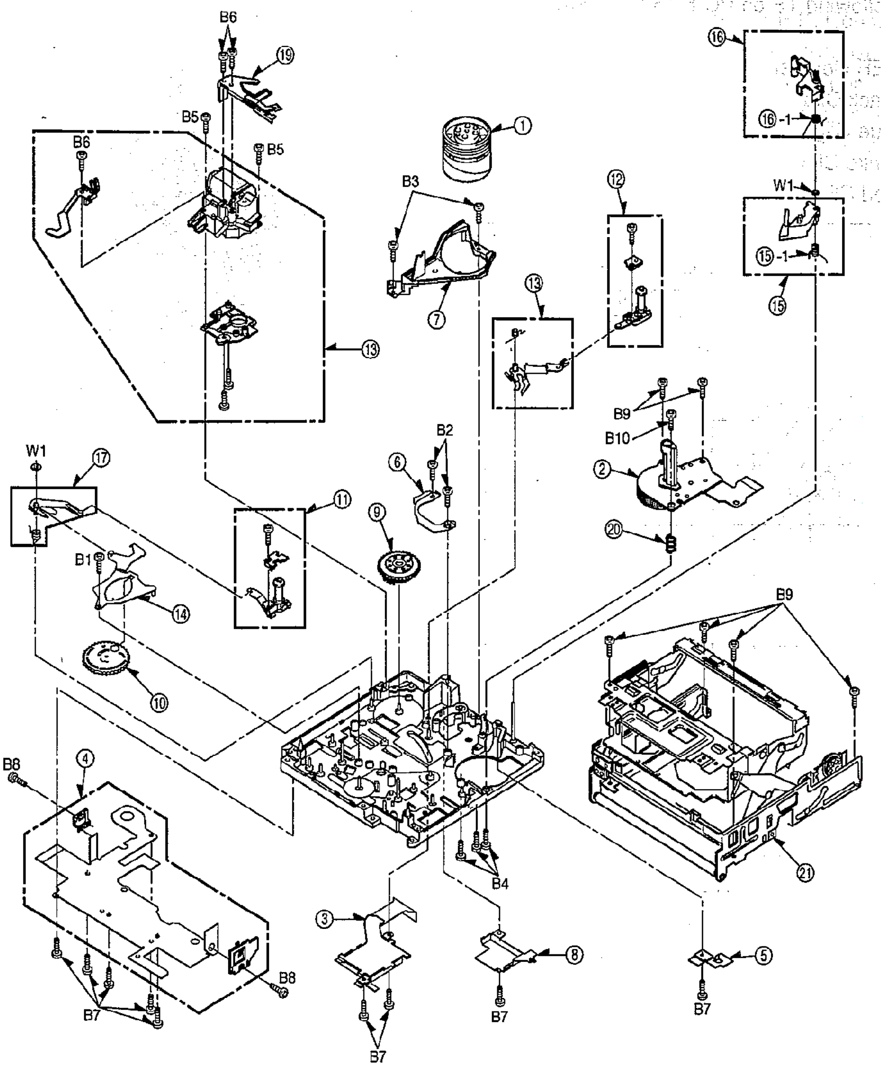
Confirm Bit Error Rate count becomes less than 50 in the assembly conditon or less than 200 in the disassembly (Mechanism) condition for each head with B.E.R. Counter.

If not, repeat 5 point adjustments (DL, ERR DL, COMP LEV, CLK PHASE, ALPHA) again.

When the Sync Error happen, Bit Error Rate becomes less than 50 or 200. However, since this is not correct, please re-adjust it.

4. Exploded Views & Parts List

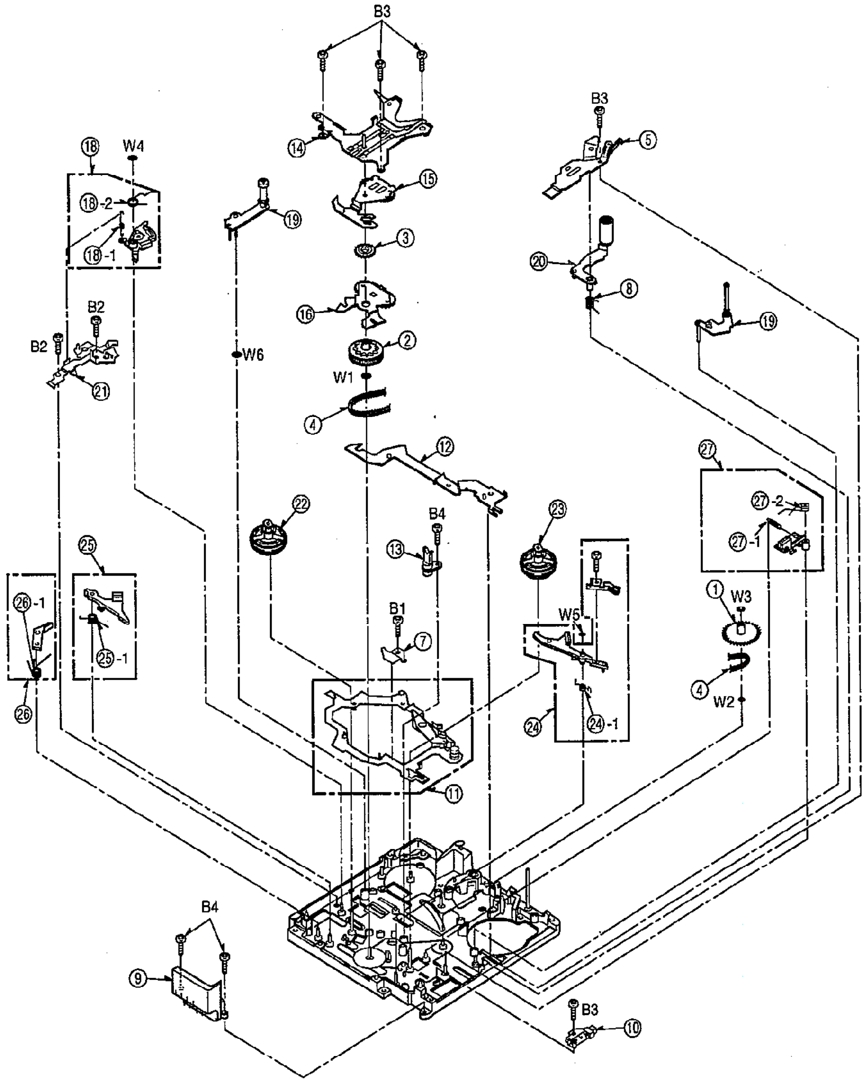
❶ VCR Mechanism 1 Section



Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1	(1)	VEG1217	CYLINDER UNIT	1	For NV-DX1
1	(1)	VEG1438	CYLINDER UNIT	1	For NV-DS1, DS5
2	(1)	VEM0624	CAPSTAN MOTOR UNIT	1	
3	(1)	VEP05224A	HEAD AMP C.B.A.	1	For NV-DX1
3	(1)	VEP05352A	HEAD AMP C.B.A.	1	For NV-DS1, DS5
3-*	(1)	VSC4214	HEAD AMP SHIELD CASE	1	For NV-DX1
3-*	(1)	VSC4639	HEAD AMP SHIELD CASE	1	For NV-DS1, DS5
4	(1)	VES0711	FLEXIBLE CABLE	1	For NV-DX1
4	(1)	VES0856	FLEXIBLE CABLE	1	For NV-DS1, DS5
5	(1)	VMA9176	CAPSTAN COVER	1	For NV-DX1
5	(1)	VMA9708	CAPSTAN COVER	1	For NV-DS1, DS5
6	(1)	VMA9179	RADON PLATE	1	
7	(1)	VMD2373	RAIL	1	
8	(1)	VSC4215	SHIELD CASE	1	For NV-DX1
8	(1)	VSC4640	SHIELD CASE	1	For NV-DS1, DS5
9	(1)	VSR0114	MODE SW	1	
10	(1)	VXA5407	CAM GEAR	1	
11	(1)	VXA5409	S BOAT UNIT	1	
12	(1)	VXA5410	T BOAT UNIT	1	
13	(1)	VXA5417	GEAR BOX (LOADING MOTOR)_	1	
14	(1)	VXA5612	RADON COVER UNIT	1	
15	(1)	VXL2461	T2 ARM UNIT	1	
15-1	(1)	VMB2789	T2 ARM SPRING	1	
16	(1)	VXL2468	CLEANING ARM UNIT	1	
16-1	(1)	VMB2791	CLEANING ARM SPRING	1	
17	(1)	VXL2470	S1 ARM UNIT	1	
18	(1)	VXL2471	T1 ARM UNIT	1	
19	(1)	VMA9753	BRUSH ARM STOPPER	1	
20	(1)	VMB2777	CAPSTAN ADJ. SPRING	1	
21	(1)	VXA5387	GARAGE UNIT	1	
B1	(1)	VHD0878	SCREW	1	
B2	(1)	VHD0989	SCREW	2	
B3	(1)	XQN14+B4	SCREW	2	
B4	(1)	VXQ0439	SCREW	3	
B5	(1)	XQN14+B35	SCREW	2	
B6	(1)	XQN14+BQ4	SCREW	1	
B7	(1)	XQN14+B15	SCREW	9	
B8	(1)	XQN14+B2	SCREW	2	
B9	(1)	VHD0882	SCERW	6	
B10	(1)	XQN14+B4FZ	SCREW	1	
W51	(1)	VMX2027	WASHER	2	

❷ *VCR Mechanism 2 Section*



Note: 1. *Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
Components identified with the mark ⚠ have the special characteristics for safety. When replacing any of these components, use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1	(2)	VDG1030	DRIVE PULLEY	1	
2	(2)	VDG1031	CENTER PULLEY	1	
3	(2)	VDG1032	CENTER GEAR	1	
4	(2)	VDV0265	TIMING BELT	1	
5	(2)	VMA9178	PINCH PRESSURE PLATE	1	
7	(2)	VMA9181	BRAKE ROD SUPPORT (T)	1	
8	(2)	VMB2776	SPRING	1	
9	(2)	VSH0067	MIC SWITCH	1	
10	(2)	VSJ0114	SOLENOID	1	
11	(2)	VXA5401	BRAKE ROD UNIT	1	
12	(2)	VXA5408	T3 ROD UNIT	1	
13	(2)	VXA5411	LED HOLDER UNIT	1	
14	(2)	VXA5412	COVER PLATE UNIT	1	
15	(2)	VXL2454	P IDLER ARM UNIT	1	
16	(2)	VXL2455	FR IDLER ARM UNIT	1	
17	(2)	VXL2456	TENSION ARM UNIT	1	
18	(2)	VXL2732	PAD ARM UNIT	1	
18-1	(2)	VMB2788	TENSION SPRING	1	
18-2	(2)	VMB2787	PAD ARM SPRING	1	
19	(2)	VXL2462	T3 ARM UNIT	1	
20	(2)	VXL2464	PINCH ARM UNIT	1	
21	(2)	VXL2466	EJECT ARM UNIT	1	
22	(2)	VXR0347	SUPPLY REEL TABLE	1	
23	(2)	VXR0348	TAKE UP REEL TABLE	1	
24	(2)	VXZ0319	TAKE UP MAIN BRAKE	1	
24-1	(2)	VMB2782	T MAIN BRAKE SPRING	1	
25	(2)	VXZ0321	SUPPLY MAIN BRAKE	1	
25-1	(2)	VMB2783	S MAIN BRAKE SPRING	1	
26	(2)	VXZ0322	FF BRAKE UNIT	1	
26-1	(2)	VMB2784	FF BRAKE SPRING	1	
27	(2)	VXZ0323	REV BRAKE UNIT	1	
27-1	(2)	VMB2786	REV SPRING	1	
27-2	(2)	VMB2785	REV BRAKE SPRING	1	
B1	(2)	VHD0882	SCREW	1	
B2	(2)	XQN14+B15	SCREW	2	
B3	(2)	VHD0883	SCREW	5	
B4	(2)	XQN14+B35	SCREW	3	
W1	(2)	VMX2503	WASHER	1	
W2	(2)	VMX2400	WASHER	1	
W3	(2)	VMX2504	WASHER	1	
W4	(2)	VMX2027	WASHER	3	
W5	(2)	VMX2028	WASHER	1	
W6	(2)	VMX2394	WASHER	1	

Memo

Panasonic

MATSUSHITA ELECTRIC

Printed in Japan